

ADEQUACY OF ANIMAL SCIENCE EDUCATION IN THE
UNITED STATES IN MEETING THE NEEDS OF
ANIMAL AGRICULTURE IN VENEZUELA

By

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LIST OF ABBREVIATIONS

AgEd	Prefix used for Agricultural Education classes
ASAS	American Society of Animal Science
B.S.	Bachelor of Science Degree
CEANAR	Commission on Education in Agriculture and Natural Resources
CENIAP	Centro Nacional de Investigaciones Agropecuarias
CIARCO	Centro de Investigaciones Agropecuarias Region Centro Occidental
CIARNO	Centro de Investigaciones Agropecuarias Region Non-Oriental
CIARZU	Centro de Investigaciones Agropecuarias Region Zuliana
FAO	Food and Agriculture Organization
FONAIAP	Fondo Nacional de Investigaciones Agropecuarias
LSU	Louisiana State University
LUZ	La Universidad del Zulia
MAC	Ministerio de Agricultura y Cria
M.S.	Master of Science Degree
MSU	Michigan State University
NCSU	North Carolina State University
O.S.U.	Oklahoma State University
Ph.D.	Doctor of Philosophy Degree
PROGAL	Programa de Ganaderia de Altura
T. A&M	Texas A & M University

UC University of California at Davis

UCOLA Universidad Centro-Occidental Lizandro Alvarado

UCV Universidad Central de Venezuela

UDO Universidad de Oriente

UF University of Florida

UI University of Illinois

UNEFM Universidad Nacional Experimental Francisco de Miranda

UNELLEZ Universidad Nacional Experimental de los Llanos Ezequiel Zamora

UNERG Universidad Nacional Experimental Romulo Gallegos

UNET Universidad Nacional Experimental del Tachina

URU Universidad Rafael Urdaneta

U.S. United States of America

USDA United States Department of Agriculture

USR Universidad Simon Rodriguez

UW University of Wisconsin

CHAPTER I

INTRODUCTION

Traditionally the professional training in animal production in Venezuela has been offered only as a specialization within the curricula of agronomy or veterinary medicine. In most cases, animal science has been only a minor part of the programs in the Schools of Agronomy and Veterinary Medicine.

Brief Review of Animal Science

Education in Venezuela

The first Schools of Agronomy and Veterinary Medicine were established by the "Universidad Central de Venezuela" (UCV) (Central University of Venezuela) in 1937. Three other universities each developed a School of Agronomy during the period 1960-1965: in 1959 "La Universidad del Zulia" (LUZ) (University of Zulia); in 1960 the "Universidad de Oriente" (UDO) (University of the East); and in 1962 the "Universidad Centro Occidental Lisandro Alvarado" (UCOLA) (University of the Mid-West Lisandro Alvarado). Two of these, LUZ and UCOLA, also developed a School of Veterinary Medicine. By 1963 only one university in the entire country, UCV, had a fully developed program in both agronomy and veterinary medicine. In 1965 the first School of Animal Husbandry was created in the "Universidad de Oriente" (UDO) (At Jusepin campus in Monagas State).

Actually, the professional animal scientist, or "zootecnista," did

not exist in Venezuela until 1970, the year in which the first graduating class of "zootecnistas" left the campus of UDO in Jusepin, Monagas State. The first graduating class of "zootecnistas" was only a few of these new professionals going into a country which did not know about "zootecnistas" and into unfair competition with the already-known agronomist and veterinarian. For the next ten years, until 1980, the School of Animal Husbandry of the "Universidad de Oriente" was the only one producing "zootecnistas" in Venezuela, with an average graduating classes of 10 to 15 graduates per year.

Since 1975 there have been new developments in animal science education in Venezuela. Three new universities offering programs in animal science were founded between 1974 and 1975. Two of these are public institutions, namely the "Universidad Nacional Experimental del Tachira" (UNET) (National Experimental University of Tachira) and the Universidad Nacional Experimental de los Llanos Ezequiel Zamora (UNELLEZ) (National Experimental University of the Plains E.Z.). One private university founded with an animal science program is the "Universidad Rafael Urdaneta (URU) (R.U. University). The first classes are scheduled to graduate in 1981 at URU and UNET, and in 1982 at UNELLEZ.

Also, within the last five years, three other universities have been created. These are already functioning to some extent, but mostly they are still in the process of organization. These universities include the "Universidad Nacional Experimental Simon Rodriguez (USR)" founded in 1974, already well underway, offering a degree in "Ingenieria de los Alimentos", or food technology engineering. The "Universidad Nacional Experimental Francisco de Miranda (UNEFM)" founded in 1977, has some active programs and is preparing programs for their newly created (1980)

Schools of Agronomy, Veterinary Medicine and "Zootecnia". The "Universidad Nacional Experimental de los Llanos Centrales Romulo Gallegos (UNERG)" also founded in 1977, is partially functioning in some programs and preparing a curriculum in "Ingenieria de Produccion Animal" or Animal Production Engineering, to be started in the near future.

Need of U.S. Animal Science Education
for Venezuelans

As stated above, there was not any Animal Husbandry School in Venezuela prior to 1965, and professionalism in animal science was the responsibility of the agronomist and veterinarian with some courses or practical experience in animal husbandry. However, there has always been a need for animal scientists in Venezuela. Students not satisfied with the alternatives for education in Venezuela, or the company or government agency that needed the "zootecnista", had no choice but to go, or to send him, out of the country to fulfill their goals. The alternatives have been to go to the United States of America, to another Latin American country, or to Europe. The trip to Europe and the cost of living there was too expensive; therefore, the traditional choices for the Venezuelan students desiring animal husbandry studies in Latin America have been Brazil, Mexico, Costa Rica and Puerto Rico, all of which have fine schools, and with the exception of Brazil, no language problem. Even though this has been the choice of many, the principal choice has been the United States. The reasons for this choice have been among the points investigated in this study.

Since 1965 when the UDO opened the first Animal Husbandry School, the lack of choice within the country no longer exists, at least to the

same extent. But the rapidly increasing animal agriculture in Venezuela and the rapidly increasing population created a demand that was too big for the only Animal Husbandry School in Venezuela; furthermore, with the opening of the School of "Zootecnia" in UDO, the interest and knowledge about the career increased among the young students. All these factors further increased the need for studies abroad for Venezuelan students in animal science.

Since 1975 the situation has changed in that the number of "zootecnistas", graduated either in Venezuela or outside the country, has become enough to reduce the actual demand to levels which the new universities throughout the country are capable of meeting almost to satisfaction. However, the tremendous expansion of the animal science education in Venezuela through the creation of as many as six completely new universities, with Animal Science Schools, within a period of five years has created a new demand for animal scientists in Venezuela. The need for qualified professors for these newly created Schools of Animal Husbandry, which are in some cases still in the process of development, has created, also, a new demand for studies abroad.

It is high priority for the animal agriculture in Venezuela to have professionals with knowledge in production, management and practical skills. Venezuela has reached a solid base of development where most of the animal production operations use some of the most advanced technology in animal science; therefore, improvement and applicability of known techniques should be the orientation given to the students. There has been a dynamic development of research in Venezuela and some students should be encouraged to go into the research areas rather than into production. And, last but not least, one of the most important

orientations that needs to be given to Venezuelans students is to stimulate them to think and to realize the importance of superior education and the importance of the qualified educator in this process. Thus, in meeting the needs of the Venezuelan students, the animal science education in the U.S. will be meeting the needs of the animal agriculture in Venezuela.

Statement of the Thesis Problem

The U.S. Animal Science Departments have for many years produced many Venezuelan professionals (teachers, researchers, extension agents, and producers). After receiving training and education in the U.S., many of these individuals have returned to their country where they can apply the knowledge and techniques learned. The experience gained in trying to apply their knowledge acquired in an animal science department in the U.S. has given them a special perspective and valuable criteria regarding the adequacy of U.S. animal science programs in meeting the needs of Venezuelan students.

The main problem with which this study is concerned is that of identifying certain aspects of judgment held by Venezuelans who have studied in the different Animal Science departments throughout the United States. There are undoubtedly some weak as well as strong points in the U.S. animal science education as regards its adequacy for meeting the needs of animal agriculture in Venezuela. Knowledge of these points could be important and of assistance to concerned individuals who may hope to work on modification and improvement of the programs in Animal Science Departments in the U.S. The ultimate outcome should be a guide for the development of an animal science program in the future, not only

for Venezuelan students, but also for all of the international students in animal science in the United States.

Purpose of the Research

There has not been a research study conducted in the United States concerning an evaluation of the programs of the Animal Science Departments specially provided for Venezuelan or international students. Evaluation is an important and useful tool in the process for measuring the results of the work, especially when improvement is the matter of concern. The primary purpose of the study was to determine how effective were U.S. Animal Science programs in terms of meeting selected, specific needs of Venezuelan students. It was directed toward former Venezuelan students trained in U.S. universities during the period of 1970 through 1980. The findings anticipated from this study are needed if they are to further improve programs provided to Venezuelan or international students.

Specific objectives of the study were:

1. To identify the reasons (persons or sources) that had weighty influence upon former Venezuelan students in making the decision to study animal science in the United States.
2. To evaluate the effectiveness of selected aspects of the undergraduate and graduate programs in animal science in terms of knowledge gained and learning experiences received by Venezuelan students completing the respective programs, using as a basis perceptions of former students regarding effectiveness of the programs, particularly as directed toward assisting their professional careers in Venezuela.
3. To determine the occupational patterns of former students after

their graduation and to determine the nature and extent of advanced studies engaged in after finishing studies at an animal science department in the United States.

CHAPTER II

REVIEW OF LITERATURE

This study involved the evaluation of the animal science education programs in the U.S. as regards their relevance to Venezuelan students' needs. In this chapter, several areas relevant to the study are explored to provide a background for interpretation of the data obtained.

Importance and Role of Animal Agriculture in Feeding the World

Based on conservative estimates, one out of every eight persons alive in 1970 was hungry (Minear, 1975). With a world population estimated at 3.8 billion people, 12 percent, or 462 million did not have adequate food. Almost 95 percent of the world's hungry people (434 out of 462 million) lived in developing nations.

By the year 2000, the population of the under-developed nations is expected to more than double to 5 billion. As population growth continues, inevitably, there will be instances in which the food supply will be inadequate. In 1967, the Wall Street Journal reported that to feed these masses and improve their diet modestly over the present unsatisfactory standards, food supplies would have to increase 306 percent in the Far East, 207 percent in the Mid East, 238 percent in Latin America and 159 percent in Africa. By contrast, food production in these areas

as a whole rose 54 percent during the past 25 years (Wall Street Journal, 1967, p. 15).

From discussions and conferences on world food problems and even from the United States Department of Agriculture (USDA), reports that focus on cereal grains and legumes proliferate. Rarely are livestock or animal products mentioned. When they are, the implication is that livestock are wasteful users of grain which could better be used in humans. Some critics of animal agriculture advocate drastic reduction in human consumption of foods of animal origin; others advocate elimination of livestock and direct consumption of plant products. Both groups assume that large tonnages of grain would somehow automatically flow to hungry people (Casey and Price, 1977; Hodgson, 1976).

Such implications incorrectly depict the situation in the United States and present an even more distorted picture worldwide. Wedin et al. (1975) stresses the importance of ruminant livestock, and potential for producing human food worldwide, and the complementary rather than competitive relationship between livestock and humans. Hodgson (1976) and Wedin et al. (1975) agreed that if this false picture is not corrected soon, we may do irreparable harm to the real potential of agriculture to provide animal products, especially beef and dairy products, in sufficient quantities to meet the needs and demands for quality food and protein sources, and still maintain proper use of the land.

Quality of food and quality of the protein is the matter of consideration when talking about animal agriculture to feed the world. Beef and dairy products supply about half of the protein consumed by humans in the United States (USDA, 1974). Animal protein is of recognized high quality, specially suited to man's needs. Dairy products are the single

most important source of protein in U.S. diets and in about half of all the countries in the world, specially in Latin America (Hodgson, 1976).

But animals provide much more than protein. Meat, eggs and dairy products supply about 33% of the total energy intake of humans in the world, 50% of the fat, 80% of the calcium, 62% of the phosphorus and significant quantities of other minerals and vitamins (Food and Agriculture Organization (FAO), 1978). And besides, such foods are highly palatable and considered preferred foods by most people around the world (Tracey, 1975).

The excellent nutritional qualities found in the animal products could be equaled, or nearly so, by a careful assembly of various vegetable products with some fortification (Crawford, 1975). But to provide these nutritionally adequate diets solely from vegetable products would be very difficult to achieve in many parts of the world and would require intensive educational efforts (Tracey, 1975). As long as economical conditions permit, most people will prefer animal products to meet their nutritional requirements simply, effectively and enjoyably (Hodgson, 1976).

Tracey (1975) reported that there is a potential demand for more animal protein and products among 85% of the world population. Crawford (1975) stated that the significance of the nutritionally well-balanced diet, which is provided by animal products, as well as many other considerations, leads us to suggest (Cole and Ronning, 1974) that production of animal products and therefore the practices of animal husbandry, are advantageous and should be continued toward its highest productivity point, to best use the resources that only through animal production could be used around the world.

Importance and Role of the Education

Process in Feeding the World

Agriculture is the profession that feeds the world. This often-repeated adage is true. Agriculturists, farmers and ranchers are the group of people that produce the food for the world.

Angkasith (1976) asserted that the rate of production in agriculture has difficulties in meeting the needs of the people in the world, especially in the under-developed world; he also asserted that the answer to this problem must compose many areas such as birth rate, economics, sociology, politics, technology, and education. The general basis of development of any kind should start from education.

During the World Food Conference held in Rome in 1974, the following recommendation was adopted:

That priority be given to, and increased resources made available for the development of agricultural education and training at all levels, in order that the required training programs can be provided. . . . Aiming at the achievement of an integral educational system (p. 74).

Angkasith (1976) stated that especially in the process of producing food for the people of the world, education in agriculture has become a vital and important factor. And Campbell and Lasley (1969) asserted that among many others in the field of agriculture, animal science is serving mankind by fulfilling its requirements in providing the knowledge for the animal agriculturist to produce efficiently the animal products needed to feed the people of the world.

Many countries have realized the importance of education in agriculture. One of the most important examples of action to accomplish this in a country was the establishment of the land-grant colleges by the Morrill Act of 1862 in the United States of America (Kellogg and Knapp,

1966). The Morrill Act brought a new concept of education to the service of democracy and to the free world. The missions of land-grant colleges differed from those of the older, classical universities. They were to provide educational opportunities for the sons and daughters of the workmen and farmers of America, particularly training for occupations related to agriculture and industry. And the growing and underdeveloped nation needed young people who knew how to do things. The three functions of a land-grant college were teaching, research and extension, always with education as the main goal (Kellogg and Knapp, 1966).

Following the Morrill Act there was a great development in education in agriculture, doing research, and spreading the knowledge from the colleges to farmers by means of extension programs. By this educational plan the United States became the great agricultural country it is today. Now five percent of the American people working on farms provide the agricultural production for the other 95 percent of the population (Duckham and Masefield, 1969).

There are many other examples of the educational fight against hunger in the world. Looking into the under-developed countries, or the developing countries such as Thailand, which is one of the agricultural countries in Southeast Asia, Tongyia (1968) reported:

Among Asian countries, Thailand is one of the few that have succeeded in reaching the target of overall rate of production increase in agriculture, i.e., 17.2 percent average production increase as against a 3.2 percent population increase per year at the conclusions of five-year plan ending in 1966 (p. 30).

He also reported about the educational training of manpower in the country:

The Thai Government early recognized that in a modern development program, manpower is a prime consideration and that a country needs skilled laborers, well trained technicians and highly qualified scientists, economists and teachers. Thailand therefore constantly tried, on a modest scale, to build up a body of trained personnel . . . this effort has been greatly expanded and accelerated through foreign aid, which has taken the form, on the one hand, of training fellowships and scholarships, and on the other hand, of the establishment of technical schools and the improvement of universities (p. 30).

This is one example of a developing country which is trying to solve the problem of increasing agricultural production to meet the needs of the people through an improvement in the educational system, and is being successful.

In general, very few underdeveloped countries are making a serious effort to develop their educational systems, with a view to improving their agricultural production. Fortunately most of the Latin American countries are aware of the importance of the education in agriculture and are doing something about it. But there is still a lot to be done.

Importance and Role of the American Universities in Feeding the World

Referring to the impact of the land-grant colleges in the U.S., Campbell and Lasley (1969) stated:

What has been accomplished in efficient agricultural production in the past has been amazing. What will be accomplished in the future could be phenomenal. Indeed, it will have to be, to feed the increasing world population (p. 10).

There is great variation among nations, in that all are not as powerful, as resourceful, as capable as the U.S. or most of the developed countries. The nations vary markedly in size. Of the 162 United Nations members and geopolitical entities in 1973, 34 had populations of less than one million; and 108 (66.7%), less than 10 million people (Casey and

Price, 1977).

Dr. Robert R. Price in his class "Education to Feed the World's Hungry" (AgEd 1713) clearly stressed that the smaller nations cannot be expected to have the full range of scientific and other professional services required in all of the fields of activity important to their development. They must, in most cases, rely on external scientific and other resources for expertise, particularly in view of the low incomes associated with their small size. Basically, they depend on the developed nations for their people to get a university education (Casey and Price, 1977).

In view of the need for agricultural development and the essential role of the education process in obtaining this development, Sanders (1963) believed that participation of the developed nations especially through their universities is a must.

Well-organized campaigns are needed now to force the pace of agricultural development, moving it at a speed with which few nations have had experience. There must be fast-moving scientific efforts to develop the technology needed. Great numbers of people will need to be trained as they participate in a direct effort to develop agriculture. Wortman (1975), in "Working Papers" for the Rockefeller Foundation, reported the following recommendation:

The task ahead is of such magnitude and the implications for the United States are so important, that a permanent organization with the mandate to develop a U.S. strategy, and with funds to implement it, would seem urgently needed. It should have the major responsibility for effective U.S. involvement in a world-wide effort that would be, because of the biological, social and political variables involved, far more complex than that of the space program. . . . Our nation has the men of wisdom with the requisite experience to guide a new initiative . . . The effort would require the involvement of many of our universities and the many groups in this country that are

ready and able to participate in a concerted, well-guided effort (p. 28).

Wortman (1975) also stated that the world's food problem is of concern to all the Americans, and that it is of special concern to the U.S. universities, which have the resources to guide the world into a better situation. With the American universities' responsibilities to the world, go the agriculture colleges' responsibilities to the universities and with these the animal science departments' responsibilities. In other words, the animal science departments in the U.S. universities have an inherent responsibility to help to feed the world. Therefore, the U.S. animal science departments have to improve themselves and their capabilities in order to be able to fulfill their responsibilities to the best of their capacity.

Importance of the Evaluation Process

For a better program and accomplishments of the goals of the U.S. animal science departments, evaluation is the most useful process for measuring the results. Evaluation should help to make any change for the effectiveness of the programs.

The Dictionary of Education (Good, 1945) defined evaluation as "the process of ascertaining or judging the value or amount of something by careful appraisal" (p. 220).

Wimmer (1972) emphasized two basic ideas of evaluation:

1. Evaluation must first be concerned with measuring results in terms of goals and objectives (that is, it is primarily output rather than process oriented).
2. Evaluation must consider not only the output of the educational program, but also must consider the impact of that output in terms of serving the needs which the program is designed to meet (p. 34).

Troyer and Pace (1944) also gave the following explanation of evaluation in education:

It is the process of judging the effectiveness of an education experience. It includes getting and summarizing evidence on the extent to which educational values are being attained.

It seeks to answer the questions, 'what progress am I making? and what success is our educational program having?' Teachers, administrators, and students are daily making values and judgments about the effectiveness of their procedures in the attainment of their goals. Thus, evaluation, whether recognized as such or not, goes on continuously in education (p. 1).

Walker, in 1974, also described the meaning of evaluation in the education process:

Evaluation is a continuous process that follows immediately after the implementation of a plan of instructional activity. Education activity should be designed to provide the student to develop the ability to relate to other people. With the results, a good accounting can be made of the teacher's effort (p. 164).

All of the previous authors who gave their ideas about the meaning and relevance of evaluation, even though they are in different fields, all seemed to give the same concept of evaluation in the educational process. Frutchey (1973, p. 3) summarized the concept of evaluation in education as "It is the process of 1) collecting information, and 2) applying standards or criteria in 3) drawing conclusions, forming judgments or making decisions."

Evaluation, like any other educational activity, must be built upon basic principles or guidelines which provide the framework for its implementation. Many principles of evaluation have been developed for evaluating various educational endeavors. For the most part, the following principles may be applied to the evaluation process, as reported by Updyke in 1965.

1. Effective evaluation is based upon the previous establishment of clearly defined purposes or objectives.

2. Evaluation should be a planned process.
3. The evaluation process should have continuity.
4. Evaluation should be a cooperative undertaking of all persons concerned with an effect by the evaluation.
5. Evaluation should be comprehensive concerning all aspects of the teacher education program.
6. The evaluation process should take advantage of a variety of techniques, instruments and methods.
7. Evaluation must be based on valid information.
8. Evaluation should include both subjective judgment and objective appraisal.
9. Evaluation should consider both the beginning status and the growth of progress toward specific goals.
10. Evaluation results should be analyzed and interpreted into a clear picture.
11. The end results of the evaluation should be the improvement of the total teacher education program (p. 16).

To continue an activity in the program without evaluating it, is somewhat analogous to the marksman who continues his shooting with no heed as to what is happening to the target. This truism is especially applicable to university departments because of the inherent influidity in such a situation (Angkasith, 1976). People can be changed, course content can be modified and programs of courses can be rearranged.

It was mentioned in the introductory chapter that no evaluation study has ever been done in an Animal Science Department in the United States concerning the programs especially provided for Venezuelan or international students. Furthermore, there has been only one evaluation study conducted in an Animal Science Department in the U.S. This one was a study conducted in the State University of New York, in Delhi, N.Y. in the Agricultural and Technical College (Delhi College) on a two-year Animal Science program. In 1961 administrative personnel at Delhi College, N.Y., observed that formal training programs for animal science technicians were virtually nonexistent. Response to this apparent need resulted in the initiation of perhaps the first two-year Animal Science Technology Program in the nation (Brant et al., 1971).

In 1971 an extensive evaluation of the development and content of the program was done by Brant and co-workers. This is, perhaps, the first and only evaluation study of this kind ever reported in an Animal Science Department.

Attempts have been made of evaluating and improving the animal science education in the U.S. universities; every so often, commentaries have been reported in the literature by lone authors expressing their valuable opinions, or by groups of experienced professionals also expressing their personal opinions in group discussions or in symposiums, but never following a methodic evaluation process (CEANAR, 1966; Salisbury, 1968; ASAS, 1968; Loosli, 1970; Lush, 1972; Haynes, 1974; Johnston, 1975; and ASAS, 1977).

A good example of the existing preoccupation for this kind of evaluation was the symposium entitled "Enhancing the Value of Graduate Degrees in Animal Science for Foreign Students" presented at the 68th Annual Meeting of the American Society of Animal Science in 1976 at College Station, Texas (ASAS, 1977), where various authors presented their experiences and opinions. Fick (1977) from the University of Florida presented a paper on the role of the graduate student, Caballero (1977, p. 909) from Organization of American States stressed the need for U.S. universities "to be conscious of the fact that the student from a developing country is different in his idiosyncrasies, background and training objectives must be reiterated." Furthermore, he stated that there are some appropriate measures and/or recommendations which will favor the attainment of a "graduate student equipped to appropriately perform in teaching, research, extension and/or agriculture development once he is back in his native country" (p. 909). Caballero (1977) also stressed

the fact that some North American livestock enterprises are making considerable investments in Latin American countries, and that an adequate understanding of the conditions and problems of Latin America's agriculture by U.S. universities "will benefit not only the foreign students but also their national students by opening to them new working and training horizons in a new world which offers great possibilities and satisfactions" (p. 911).

Kunze (1977) also in the ASAS symposium presented the "Role of the Graduate College"; Fick (1977) exposed the "Role of the Graduate Student in Obtaining Graduate Training Relevant to his Goals." In this symposium Ordonez (1977), a Venezuelan student seeking for his Ph.D. degree, at the moment in Texas A & M, presented the "Problems of Foreign Graduate Students and Factors Limiting Their Expectations." This presentation was based on the results of a questionnaire given during June of 1976 to 58 foreign graduate students enrolled in the Departments of Animal Sciences, Poultry Sciences, Range Science and Agricultural Economics at Texas A & M at the time, and on his personal experience. Finally, Conrad (1977) presented the "Role of the Department, Graduate Committee and Advisor" based on his experiences of many years and consultations with other faculty members with experiences on foreign students advisory. The most important contribution of this symposium was the fact that it exposed the concern of the Animal Science Society and of the U.S. Animal Science departments, for the foreign student training, enhancing the need and value of this kind of evaluation study.

Importance of Former Graduates in the Evaluation Process

Numerous studies (Angkasith, 1976; Henderson, 1962; Arthur, 1973;

Siegenthaler, 1965; Haynes, 1974 and Brant, 1971) have been made in relation to evaluation of agricultural education programs, which shows that researchers and departments are interested in programs to keep up with the changing agriculture.

In the evaluation process there are many sources to use when appraising the effectiveness of an educational program. The former student is one of the most useful resources for information in evaluation, as Bender (1967) points out:

Former graduates, having the experience of testing themselves in post-college responsibilities, are in an excellent position to appraise critically certain segments of the teacher education program. Perhaps no other group can provide a more valid appraisal to serve as a basis for improving the program.

Former students know better than anyone else how well prepared they were to make an acceptable beginning as well as advance in a profession. They are the logical source of information for determining the strength and weakness of the program. Perhaps no other group can provide a more valid appraisal to serve as a basis for improving the program (p. 327).

The importance and validity of this statement by Bender is also shared by other authors. One of them, Walker (1974), also reported the former student as an important source of information:

Follow-up, by survey, former students at three, five and ten-year intervals, continually remain open for suggestions from students of ways to improve the program, then with the aid of the advisory committee, incorporate suggested improvement into the program (p. 164).

Another recognition to the former students is the fact that the Agricultural Education Department at Oklahoma State University has maintained a policy of attempting to provide an opportunity for students to evaluate the program in each semester, as they leave, in order to improve the on-going program effectively; also, the graduates have been asked specifically to evaluate certain segments of the program after they have obtained some outside experiences (Angkasith, 1976).

The researcher has selected a few relevant studies concerning the evaluation of educational programs through the former student, especially on agriculture-related majors and/or related to international students, to stress the importance of the former student in the evaluation process.

A study of the curriculum for international students in the Agricultural Education Department at Oklahoma State University, with suggestions for future improvement, was conducted by Gill in 1962. The purpose of the study was to determine the needs of the international students who attended O.S.U. to obtain the degrees or to do further studies in Agricultural Education. Students were asked to respond to such questions as 1) What is their opinion concerning possible relationships between training received for the career and courses taken, and 2) What were the most useful subjects and experiences provided, and which met needs for maximum benefit when the student returns home.

According to his findings and conclusions, students have to put more emphasis on the addition of a few new subjects like Audiovisual Aids, Human Psychology and Plant Pathology. Stress was also made for longer stays on tours and field trips. Although 44 percent of the former students were working as vocational agriculture teachers and 25 percent as a supervisor or administrator and were satisfied with their jobs, still they needed more training on administrative subjects. Ninety percent of the former students have laid more stress on the technical subjects like soil technology, field crops, farm management, poultry production, etc. and 70 percent needed more knowledge on human psychology.

A study of evaluation of Jimma (Ethiopia) Agricultural Technical School program was conducted by Siengenthaler in 1965; the study was based upon the opinion of Jimma graduates. The study was undertaken as

a beginning of an evaluation of the agricultural education in Ethiopia. There were implications in the results of the study toward a change in the present training program; as expressed by the former students, it should be an increase toward the amount of practical work training. Over half of the former graduates expressed opinions that practical work training should be increased. In the courses of the interviews, graduates revealed a desire to have received more practical training in some skills related to different crops. Graduates repeatedly emphasized that they would like to have had the additional time spent in practical application of such skills without additional theory. The overall opinion of former graduate students was favorable toward the courses offered at Jimma.

Another example in the use of former students' opinions to evaluate an educational program is the study of Updyke (1965), "New Teachers' Perception of the Pre-Service Agricultural Education Program at Oklahoma State University," in which he reported that 82.8 percent felt that professional courses of the agricultural education curriculum contributed very highly toward their success. It was also indicated that 71 percent felt technical courses contributed to their occupational success.

Angkasith (1976) conducted an evaluation of the Agricultural Education Program at Oklahoma State University by international former students. The purpose of the study was to determine the relative effectiveness of selected aspects of the graduate program in AgEd at O.S.U. in terms of knowledge gained and learning experiences received by international students completing a program of advanced studies, using as a basis student perception of program effectiveness, particularly as directed toward their recognition of assistance provided for further

development of their professional careers. As a whole, the former students indicated that the program had accomplished an outstanding job in serving international students. They felt the program was well-structured and had the flexibility needed to serve both American and international students. Respondents did, however, point out some items which they felt could well be improved. Among these were keeping students well-informed concerning academic rules and regulations, relevance of courses and materials, and adequacy of courses in meeting specific needs of international students.

These are some of the examples of the evaluation programs that have been conducted by several researchers from different points of view, in which the importance and participation of the former student in helping in the evaluation process has been stated, and thus its value in achieving better educational programs for a better production in agriculture is recognized.

CHAPTER III

DESIGN AND METHODOLOGY

The design and conduct of the study were dictated by the main purpose of the study, which was to evaluate the programs of animal science in the United States in meeting the needs of Venezuelan students.

To collect information on Venezuelan animal science graduates from universities in the United States, the author had to accomplish the following tasks:

1. Determine the population for the study.
2. Develop the instrument for collecting the data.
3. Develop the procedure for collecting the data.
4. Select the method for analyzing the data.

Population for the Study

There is no precise way of knowing exactly how many "zootecnistas" there are in Venezuela. The only body of professionals is the "Colegio Venezolano de Zootecnistas" (College of Animal Scientists), which is of national coverage. All of the zootecnistas graduated in Venezuela and abroad are supposed to register upon completion of their studies. The "Colegio de Zootecnistas" was founded only 10 years ago and is still in the process of development. Many "zootecnistas", especially those who graduated abroad, have failed to register; thus the "Colegio" does not have a complete list of all the animal scientists who have graduated

abroad. Thus, the researcher was able to identify only those who have registered.

The original potential population for this study consisted of 46 animal science graduates (B.S. degree) of a university in the United States and registered in the "Colegio de Zootecnistas"; the researcher was able to identify 13 more also graduated (B.S. degree) in the U.S. but not registered in the "Colegio". The researcher was able to estimate that there are at least 40 to 50 more graduates in the country that are not registered. In addition to the 59 B.S. degree graduates, the researcher was able to identify, with the help of a listing supplied by FONAIAP and MAC, 53 graduates from Venezuelan universities who have done graduate work in the United States (53 with M.S. and 24 with Ph.D). Among these were agronomists, zootecnistas and veterinarians - all of whom are graduates from Venezuelan universities. Out of the total 59 B.S. degree graduates from U.S. universities identified, there are 19 with M.S. degree and 6 with Ph.D. degree. In summary, the potential population for the study consisted of 59 B.S. degree holders from American universities (19 with M.S. and 6 with Ph.D.) and 53 graduates from Venezuelan universities with graduate work in a U.S. university (53 with M.S. and 24 with Ph.D.), making a total of 112 possible subjects for the study.

Further investigation showed that 78 out of the 112 already identified subjects were working either in an university or in a research center. This left only 34 subjects working either in privately-owned ranches or in private companies. The decision was made to attempt to interview 100% of the group working in universities or research centers because of their accessibility; and out of the remaining 34 candidates,

attempts to interview as many as possible were planned.

Development of the Instrument

In formulating the statements used on the survey instrument, related literature was reviewed; and this led to revision of instruments that have been used by previous investigators. Best (1959) listed eight characteristics of a good questionnaire, which should be observed in constructing such instruments as follows:

1. It deals with a significant topic, a topic the respondent will recognize as important enough to warrant spending his time in completing. The significance should be clearly and carefully stated on the questionnaire, or in the letter that accompanies it.
2. It seeks only that information which can not be obtained from other sources such as school reports or course data.
3. It is as short as possible, only long enough to get the essential data. Long questionnaires frequently find their way to the wastebasket.
4. It is attractive in appearance, neatly arranged and clearly duplicated or printed.
5. Directions are clear and complete, important terms are defined, each question deals with a single idea, all questions are worded as simply and clearly as possible, and the categories provide an opportunity for easy, accurate and unambiguous response.
6. The questionnaires are objective, with no leading as to the responses desired. Leading questions are just as inappropriate on a questionnaire as in a court of law.
7. Questionnaires are presented in a good psychological order, proceeding from general to more specific responses. This order helps the respondent to organize his own thinking so that his answers are logical and objective. It may be well to present questions that create a favorable attitude before proceeding to those that may be a bit delicate or intimate. If possible, annoying or embarrassing questions should be avoided.
8. It is easy to tabulate and interpret. It is advisable to preconstruct a tabulation sheet, anticipating how the data will be tabulated and interpreted, before the final form of the question is decided upon. This working backward from a visualization of the final analysis of data is an important step in avoiding ambiguity in questionnaire form (p. 170).

An instrument was developed by adopting parts of those developed by

Heathcott (1974), Henderson (1962), Arthur (1973), Pritchard (1970), Updyke (1965), and Angkasith (1976) for securing follow-up information from former students. Some additions and deletions were made on the instruments so the investigator could secure certain types of relevant information. Seven major areas were covered by the instrument including the following:

1. Personal information
2. Person who influenced student to come to the U.S.
3. Employment information
4. Departmental administration assessment
5. Animal Science education assessment
6. Non-academic activities assessment
7. Post-graduate program assessment

When the instrument was formulated, it was given to some faculty members of the Agriculture Education Department and of the Animal Science Department of Oklahoma State University, to some fellow graduate students and tested by all international graduating seniors in the Animal Science Department, class of 1980, for review and evaluation. Interviews with the above-mentioned individuals were conducted; and necessary changes, deletions and additions were made for clarity. It was then submitted to the investigator's Masters advisory committee for their critical review and suggestions. Then suggestions were made by the advisory committee, and these were incorporated into the final form of the instrument. Finally, upon arrival in Venezuela, and after consultation with the advisors to the Minister of Agriculture and to FONAIAP, the instrument was translated to the Spanish language by a professional translator.

Collection of the Data

During the months of June and July of 1980, the researcher traveled to Venezuela in order to collect the data. After properly identifying and locating the working addresses of all the subjects, four different journeys were planned to five different regions in Venezuela. These trips are described as follows:

Trip one: Central and Midwestern regions, visiting UCV (Maracay), CENIAP, CIARCO and UCOLA, where 44 subjects were interviewed and asked to answer the questionnaire.

Trip two: The Andean region, visiting UNELLEZ, UNET, PROGAL and CIARZU (south), where 22 subjects were interviewed and asked to answer the questionnaire.

Trip three: Western region (Zulia state), visiting LUZ, URU and CIARZU (central and north), where 25 subjects were interviewed and asked to answer the questionnaire.

Trip four: The Eastern region, visiting UDO (Jusepin) and CIARDO (central), where 21 subjects were interviewed and asked to answer the questionnaire.

While visiting each of the above regions, the private working individuals who live or work in the respective area were located and then interviewed and asked to answer the questionnaire.

At each location all of the available individuals subject to the investigation were interviewed on a one-to-one basis, and after having personally explained to them the objective of the research, the value of the questionnaire and of their own opinions, the questionnaire was given to the individuals to be picked up the following day.

After all the visits and interviews were completed, 98 out of the 112 individuals subject to the investigation were interviewed and a total of 74 usable answered questionnaires were obtained.

Analysis of the Data

The following description of the analysis is included to provide an overview of the statistical treatment of the data collected from the Venezuelan students who have graduated from an Animal Science Department in an U.S. university and have been working in Venezuela in the period 1970 to 1980.

In an analyzing one part of the instrument, a Likert-type scale, which had categories from "great influence" through "no influence" was used. To permit statistical treatment of the data, numerical values were assigned to the response categories in the following pattern:

Response Categories	Numerical Values	Range of Actual Limits for Categories
Great Influence	5	4.50 and above
Considerable Influence	4	3.50 - 4.49
Some Influence	3	2.50 - 3.49
Little Influence	2	1.50 - 2.49
No Influence	1	1.49 and below

In another part of the instrument, a Likert-type scale which was a continuum from "Strongly agree" through "Strongly disagree" was used. For statistical treatment these data, numerical values, were assigned to the response categories in the following pattern:

Response Categories	Numerical Values	Range of Actual Limits for Categories
Strongly Agree	5	4.50 and above
Agree	4	3.50 - 4.49
Neutral	3	2.50 - 3.49
Disagree	2	1.50 - 2.49
Strongly Disagree	1	1.49 and below

Throughout the questionnaire there were some questions of negative connotation. These questions were set in with the purpose of breaking the monotony of the questionnaire and to maintain attentiveness of the respondents. For these negative-connotation questions, the ratings of the numerical value were reversed.

The data were compiled and tabulated in a manner designed to disclose findings related to the purpose and objectives of the study. Since the research effort was primarily of a descriptive nature, statistics such as arithmetic averages, percentages, and mean responses were selected as appropriate means of describing the findings.

The judgments of the Venezuelan students who had returned to work in Venezuela after obtaining a degree in Animal Science in the U.S., were statistically compared to those who were still in the U.S. in pursuit of their degrees in Animal Science. To that effect, the questionnaire was given to the Venezuelan students at the Animal Science Department in Oklahoma State University. The questionnaire was answered by nine graduating seniors (1980) and six graduate students.

For the statistical comparison of the judgments between the former Venezuelan students who had returned and those who were still pursuing their degree (1980, graduating seniors and graduate students). The "t" test for significant differences was made at the 0.05 level; the null-hypothesis for this case was that the answers of the different groups were not different.

In the computation of the "t" test for uncorrelated data, two "t" models can be used (Popham, 1973). These two "t" models formulas are

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

Separate Variance "t" model

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2} \right) \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

Pooled Variance "t" model

In selecting one of the two "t" models, it is necessary to know whether the variances of the two populations are homogeneous. To test the homogeneity of the two population variances, a simple statistical test, the F-ratio, was used (Popham, 1973). The formula for the F-ratio is:

$$F = \frac{S_g^2}{S_l^2}$$

Where: F = the value by which variance homogeneity will be tested.

S_g^2 = the greater (larger) sample variance.

S_l^2 = the lesser (smaller) sample variance.

The F table is designed for use with a one-tailed test of significance. In the F-ratio test of variance homogeneity, it is not known in advance which variance will be greater. Hence, it is not certain which variance will eventually be placed in the numerator of the ratio. Since it might be either of the two variances, a two-tailed test was used to interpret the F-ratio. To compute the 5 percent level of significance for two-tailed F-ratio test, one must use the tabled values to represent the 2.5 percent level of significance for the one-tailed F-values table (Snedecor, 1967).

On the last section of the questionnaire, section III: "Overall Evaluation of the Animal Science Program at U.S. Universities", there were some questions from previous sections. The purpose of this duplication was only to stress the statements concerning such questions and to compare each duplication with its original question to check for

continuity on the answers.

Assumptions

For the purpose of the study, the following assumptions were accepted:

1. It was assumed that respondents answered the questionnaire truthfully and with considerable care and deliberation.
2. It was assumed that judgments of Venezuelan students completing the program constitute one of the most reliable sources for evaluating the effectiveness of the animal science program in the U.S. in terms of meeting the needs of Venezuelan students.
3. It was assumed that Venezuelan students having graduated from an American University with a major in Animal Science and now being employed in research stations, universities, and government and private enterprises in Venezuela, were able to accurately recall their experiences and make judgments as to their values.
4. It was assumed that the nature and quality of the animal science programs was similar among the different U.S. universities and remained relatively constant throughout the 10-year period.
5. It was assumed that students coming from the various regions in Venezuela would have essentially the same needs for training experiences and would thus make relatively similar evaluation responses.

Limitations

Some limitations that have been recognized by the investigator include the following:

1. This study was limited to Venezuelan students who have studied

in the Animal Science department of any American university during the period 1970 to 1980.

2. In this study no effort was exerted to study the Venezuelan students as regards to such factors as: a) parental background, b) salary in employment, c) position of employment.

3. No attempt was made to compare aspects of the programs by different years, eras or portions of the total time period.

4. No attempt was made to compare aspects of the programs by different U.S. universities, colleges or institutions.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

Recommendations for further improvement of animal science education program of Venezuelan and international students at the different universities in the United States was a major objective of the study. Components of the animal science programs were put together in the form of a questionnaire to which a selected group of Venezuelan students were requested to respond by giving their opinions and judgments as to the effectiveness of the programs in meeting the needs of Venezuelan students. Also, they were asked to suggest measures that might be undertaken to make the programs function even more to the advantage of the Venezuelan students.

Data Treatment

To facilitate data analysis and comparison of the judgment of former Venezuelan students who returned to Venezuela as contrasted to those who still reside in the United States, data were subjected to the "t" test to determine significant differences. Procedures and analysis techniques are briefly presented in this chapter.

As discussed in Chapter III, in analyzing one part of the instrument, a Likert-type scale which had categories from "great influence"

through "no influence" was used. To permit statistical treatment of the data, numerical values were assigned to the response categories (Chapter III, p. 29).

The computation procedures used in the comparison of judgments between former students, who had returned, and those who were still residing in the U.S., as mentioned in Chapter III, was the "t" test for significant differences; and to test for homogeneity of variances, the F-ratio test of variance homogeneity was used. The level of significance of 0.05 was used for both the F-ratio test and "t" test.

Population

The original population for the study comprised all Venezuelan students who graduated during the period 1970 and 1980. As mentioned in Chapter III (p. 25) a total of 112 possible subjects for the study were identified, 59 B.S. degree holders from American universities (19 with M.S. and 6 with Ph.D.) and 53 graduates from Venezuelan universities (53 with M.S. and 24 with Ph.D. in U.S. universities).

A total of 98 (87.50 percent) subjects were interviewed and asked to answer the questionnaire, and a total of 74 (75.5 percent) answered questionnaires were obtained. Of the 12 Venezuelan seniors (1980) in the Animal Science Department at O.S.U., a total of 9 (75 percent) answered the questionnaire. And a total of 6 out of 6 (100 percent) of the Venezuelan graduate students in the animal science department at O.S.U. in 1980 also answered the questionnaire. The first group was considered to be the former students who had returned and the last two groups were considered those who were still in the U.S.

Findings of the Study

The following section contains data collected relative to the statements in the data collection instrument. To facilitate presentation of these responses, this section will first present some data related to the general information section of the questionnaires, and then the data related to the section of the questionnaire concerning the influences and motivations on the decision to study animal science in the United States. Then the judgments of the former Venezuelan students will be presented by percentage response and mean response for each one of the statements asked in the questionnaire. And last, the judgment mean responses of the former students will be compared to those of the resident students.

Scholastic Attainment in Terms of Degrees and Institutions

The University of Florida has been the most popular choice of the Venezuelan students; nine out of 30 (30 percent) B.S. degree holders came from that university (Table I). In second place are Oklahoma State University and Louisiana State University with 7 (23.3 percent) out of 30 B. S. degrees from each one; all together U.F., O.S.U. and L.S.U. had 76.67 percent of all the B.S. degrees.

The same pattern can be observed at the graduate study levels: of 50 M.S. degrees, U.F. had 15 (30 percent), followed by Texas A & M University with 8 (16 percent), University of California (Davis) with 6 (12 percent) and Michigan State University with 5 (10 percent). All together U.F., T. A & M, U.C. (Davis) and M.S.U. had 68 percent of all the M.S. degrees earned. At the Ph.D. level, out of 19 degrees awarded,

TABLE I
DISTRIBUTION OF SCHOLASTIC ATTAINMENT IN
TERMS OF DEGREES AND INSTITUTIONS

Degree Received	<u>INSTITUTIONS</u>														Other USA Univ.	Other World Univ.	Degrees Total	
	UCV	LUZ	UDO	UCOLA	O.S.U.	U.F.	LSU	TA&M	UC	MSU	NCSU	UW	UI	Cornell				
B. S. Animal Science					7	9	7	3	2	1	1							30
Agronomic Engineering	6	7	1														1	15
Veterinary Medicine	13	2		4														19
Zootechnist (Animal Scientist)			9														1	10
M.S. Animal Science						15	3	8	6	5	2	3	2	3		3		50
Ph.D. Animal Science						6	2	3	2	2	1	1		1		1		19
Institutions Total	19	9	10	4	7	30	12	14	10	8	4	4	2	4		4	2	

Abbreviations: UCV = Universidad Central de Venezuela; LUZ = La Universidad del Zulia; UDO = Universidad de Oriente; UCOLA = Universidad Centro-Occidental Lizandro Alvarado; O.S.U. = Oklahoma State University; U.F. = University of Florida; LSU = Louisiana State University; TA&M = Texas A & M; UC = University of California (Davis); MSU = Michigan State University; NCSU = North Carolina State University; UW = University of Wisconsin; UI = University of Illinois.

again the University of Florida had the most (31.6 percent), followed by T. A & M with 15.8 percent.

Among the graduates from the Venezuelan universities, the Central University of Venezuela (UCV) had 45.2 percent of the total 42 interviewed. Out of the 19 graduates in Veterinary Medicine, 13 (68.4 percent) came from UCV. With respect to "zootecnistas" (animal scientists), all but one, as expected, came from the only school in the country with a program in Animal Husbandry, namely the "Universidad de Oriente" (UDO).

With respect to the degrees, of the 74 subjects interviewed, 30 (40.5 percent) are B.S. degree holders; 19 (25.7 percent) graduates in Veterinary Medicine; 15 (20.3 percent) graduates in Agronomic Engineering; and 10 (13.5 percent) graduates in Animal Husbandry. Also, out of the 50 Venezuelan students with a Master of Science degree, 19 (38 percent) also completed the Doctor of Philosophy degree; and, out of the 30 B.S. degree holders, 6 (20 percent) obtained their M.S. degree.

Persons Influential in Choice of Animal Science as a Career

Data in Table II reports responses of former Venezuelan students as to the influence of certain persons upon their decision to study animal science. There were five categories relating to different persons who may have influenced the students to study animal science.

Responses indicated the greatest influence was "own experience", with the average rating being "considerable". Family business was the next most influential factor, rating "some"; also rating "some" was the college or school counselor, which was third in importance. Rating

TABLE II

DISTRIBUTION OF RESPONSES CONCERNING THE PERSON WHO
INFLUENCED THE DECISION TO STUDY ANIMAL SCIENCE

Statements	Total	Student Responses										Average Rating
		Great		Considerable		Some		Little		No		
		N	%	N	%	N	%	N	%	N	%	
Father or Guardian	74	9	12.16	7	9.46	14	18.92	10	13.51	34	45.95	2.28
College of School Counselor	74	7	9.46	20	27.03	8	10.81	7	9.46	32	43.24	2.50
Friend Who Had Studied It	74	7	9.46	7	9.46	17	22.97	11	14.86	32	43.24	2.27
Own Experience	74	35	47.30	7	9.46	14	18.92	5	6.76	13	17.57	3.62
Family Business	74	13	17.57	16	21.62	6	8.11	5	6.76	34	45.95	2.58

"little" and ranking fourth and fifth were "father or guardian" and "friend who studied it".

Source of Influence to Study in the
United States

The responses of former Venezuelan students as to the sources of influence on their decision to come to study in the United States are summarized in Table III. Among the eleven sources given as a possible choice, "Excellence of U.S. animal science education" received the highest rating, being also the only statement rated "considerable". This would indicate that the high opinion and fame which precede the U.S. studies in animal science played a very important role in influencing the Venezuelan students to select the United States.

The statement "Political problems in local universities" received the second highest rating; the rating of "some" and second ranking of this statement show that local problems are a major item considered by the students upon their decision to study abroad.

Two other statements rated "some" and ranking third and fifth are "Reputation of U.S. Degrees" and "Prestige"; this emphasized the fact that in Venezuela there is an excellent opinion of the U.S. studies in animal science, and this fact alone might be the single most important source of influence for students to decide upon the United States as the place to study.

Government financial support was also rated "some" and ranked fourth, which would tend to show that financial aid to the former Venezuelan students by their government was also a major item considered.

Three other statements were rated "some", these are: "Needed for

TABLE III

DISTRIBUTION OF RESPONSES CONCERNING THE SOURCE OF INFLUENCE FOR
THEM TO COME TO STUDY IN THE UNITED STATES

Statements	Total	Student Responses										Average Rating
		Great		Considerable		Some		Little		No		
		N	%	N	%	N	%	N	%	N	%	
Father or Guardian	74	15	20.27	6	8.11	11	14.86	3	4.05	39	52.70	2.39
College of School Counselor	74	12	16.22	9	12.16	9	12.16	6	8.11	38	51.35	2.34
Government Official	74	8	10.81	6	8.11	7	9.46	5	6.76	48	64.86	1.94
Government Financial Support	74	32	43.24	6	8.11	1	1.35	6	8.11	29	39.19	3.08
Parental Financial Support	74	16	21.62	11	14.86	10	13.51	9	12.16	28	37.84	2.70
Reputation of U.S. Degrees	74	22	29.73	20	27.03	7	9.46			25	33.78	3.19
Political Problems in Local Universities	74	25	33.78	19	25.68	4	5.41	5	6.76	21	28.38	3.30
Needed for Reaching Higher Positions	74	20	27.03	12	16.22	8	10.81	5	6.76	29	39.19	2.85
Prestige	74	26	35.14	7	9.46	9	12.16	4	5.41	28	37.84	2.99
Excellence of U.S. Animal Science Education	74	29	39.19	19	25.68	7	9.46	7	9.46	12	16.22	3.62
Others	74	18	24.32	15	20.27					41	55.41	2.58
Not Specified										41	55.41	
Specified: To learn English		18	24.32	15	20.27							

reaching higher positions", "Parental financial support" and "Others: to learn English", ranking sixth, seventh, and eighth; the last three statements, "Father or guardian", "College or school counselor", and "Government official", can be recognized as being of little influence.

When the sources of influence are analyzed in terms of percentages, "Government financial support", receiving 43.24 percent responses in the greatest influence category, would rank this item in first place instead of fourth. Likewise, statements "Excellence of U.S. Animal Science education" and "Prestige", receiving 39.2 and 35.1 percent responses of the "greatest" level, would rank as second and third, reinforcing the already stated importance of the good reputation that the U.S. studies have in Venezuela.

Distribution of the Employment of Former Venezuelan Students

Data presented in Table IV reveals the result of the analysis regarding employment after completion of the study program. A choice of eight areas of work were offered in the questionnaire. The former Venezuelan students also indicated, at their own will, the type of employer for which they were working.

The occupation that most of the Venezuelan students held following graduation was teaching, either by itself or combined with research. Overall, 43.25 percent of the respondents were teaching in an institution of higher education, placing teaching as the single most important source of employment for the former Venezuelan students interviewed.

The second largest occupation group is research. Overall, research accounted for 35.1 percent, with 6.75 percent doing basic research only,

TABLE IV
DISTRIBUTION OF THE EMPLOYMENT OF FORMER VENEZUELAN
STUDENTS BY EMPLOYER AND AREA OF WORK

Employer	Area of Work															
	Basic Research		Applied Research		Teaching and Research		Teaching Only		Extension Service		Ranching and Farming		Services to Producers		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Government	3	4.05	8	10.81	13	17.57	15	20.27	6	8.11					45	60.81
Foundation	2	2.70													2	2.70
Private Company							4	5.41			3	4.05	7	9.46	14	18.92
Self-Employed											13	17.57			13	17.57
Total	5	6.75	8	10.81	13	17.57	19	25.68	6	8.11	16	21.62	7	9.46	74	100.00

10.8 percent doing applied research only, and the 17.6 percent as already mentioned above doing some teaching in addition to research.

Ranching and farming was the third most common occupation among the respondents, with 21.6 percent. Most of these, 17.6 percent, were private businesses. The next two most common occupations were services to producers through private companies, with 9.5 percent, and governmental extension services, with 8.1 percent.

Regarding employers, the largest of all, employing 60.8 percent of the graduates, was the government. Among the different areas of employment considered to be governmental were public universities (37.8 percent), research stations (14.9 percent) and governmental extension services (8.1 percent).

Private business was second as an employer, with 36.5 percent. The two fractions of non-government enterprise were private companies (18.9 percent), including private universities (5.4 percent), company-owned ranching (4.05 percent), and services to producers (9.5 percent). Self-employment accounted for 17.6 percent of the employment of the subjects; all being in ranching and farming. And last with only 2.7 percent of the employment were the foundations.

Opinions and Judgments of the Venezuelan
Former Students as to the Effectiveness
of Selected Aspects of the U.S.
Animal Science Programs

Administration and Organization

Data analysis of the opinion and judgment of former Venezuelan students as to the selected aspects of the administration and organization

of the Animal Science Departments is presented in Table V.

The statement "The administration of the Animal Science Department had well-qualified personnel instructors" received an average rating of 4.53, thereby ranking in first place and the only one rating "strongly agree". This statement was rated as "strongly agree" by 68.9 percent of the respondents.

Items with an average rating score of 3.50 and above and rating as "agree" included: "The head of the department did an outstanding job in administrating the animal science program", ranking second with a ranking of 4.01; "Secretaries and other staff of the department were always friendly or very cooperative with the international students" rated 3.92; "The head of the department had a good relationship with international students" rated 3.73; "The administration of the department played an active role in student functions and activities" rated 3.65. Statement six, "The head of the department appeared to be somewhat prejudiced against international students", rated 3.62, placing it in the "disagree" category. Although the average rating of 3.62 ranked the item in sixth place, the fact that only 5.4 percent answered "strongly agree" and another 5.4 percent "agree", showed that the Head of the department was viewed by few respondents as having prejudice against international students.

The remainder of the statements rated as "agree" were "The administration of the department was concerned with meeting the needs of all students", rated 3.55, and "Flexibility in administration of the department concerning international students was most satisfactory", rated 3.50.

Concerning failure of the department to properly advise

TABLE V

JUDGMENTS OF FORMER VENEZUELAN STUDENTS IN ANIMAL SCIENCE
ON DEPARTMENTAL ADMINISTRATION AND ORGANIZATION

Statements	Total	Responses										Cumulative Rating	Average Rating	Rank
		Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree				
		N	%	N	%	N	%	N	%	N	%			
1. The administration of the Animal Science Department had well-qualified personnel as instructors.	74	51	68.92	13	17.57	8	10.81	2	2.70			355	4.53	1
2. The administration of the department was concerned with meeting the needs of all students.	74	15	20.27	24	32.43	25	33.78	7	9.46	3	4.05	263	3.55	7
3. The administration of the department played an active role in student functions and activities.	74	15	20.27	30	40.54	18	24.32	10	13.51	1	1.35	270	3.65	5
4. The Head of the department did an outstanding job in administrating the Animal Science program.	74	25	33.78	25	33.78	24	32.43					297	4.01	2
5. The Head of the department had a good relationship with international students.	74	23	31.08	25	33.78	14	18.92	7	9.46	5	6.76	276	3.73	4
6. *The Head of the department appeared to be somewhat prejudiced against international students.	74	4	5.41	4	5.41	26	35.14	22	29.73	18	24.32	268	3.62	6
7. Secretaries and other staff of the department were always friendly or very cooperative with international students.	74	23	31.08	30	40.54	14	18.92	6	8.11	1	1.35	290	3.92	3
8. *The administration of the department at times failed to properly advise international students concerning rules and regulations.	74	4	5.41	24	32.43	18	24.32	20	27.03	8	10.81	226	3.05	9
9. Flexibility in administration of the department concerning international students was most satisfactory.	74	14	18.92	28	37.84	18	24.32	9	12.16	5	6.76	259	3.50	8
10. The administration of the department was concerned with meeting the needs of international students.	74	4	5.41	25	33.78	23	31.08	15	20.27	7	9.46	226	3.05	9

*Negative Statements: reversed in rating scores applied.

international students regarding rules and regulations, it should be noted that even though the average rating score of 3.05 placed it in the neutral category, 37.8 percent of the respondents answered "agree" to this statement of negative connotation, thereby showing a negative feeling concerning this issue.

Advisement and Counseling

Table VI contains the result of data analysis of the judgment of former Venezuelan students as to selected aspects of advisement and counseling as provided by the Animal Science departments.

Statements concerning the qualifications and willingness of academic advisors to assist international students rated high, 3.88 and 4.03, on the agreement scale. Moreover, a high proportion of former Venezuelan students perceived that the advisors of the department were effective in their encouragement to each international student to study and complete assignments. All of these statements were rated as "agree", which indicated that former Venezuelan students considered that advisors did a good job.

Statements stating that advisors were patient, understanding and happy in their dealings with students received average rating scores between 3.72 and 3.56, which placed them as "agree" rated. The statement about availability of advisors outside of class time ranked in fourth place. However, listed as a negative statement, the fact that 45.95 percent answered disagree and 22.97 percent answered strongly disagree, with only two respondents (2.7 percent) checking strongly agree showed that in general, former Venezuelan students had a favorable opinion of their advisors and faculty members.

Statements eight and five, constructed as negative statements in

TABLE VI

JUDGMENTS OF FORMER VENEZUELAN STUDENTS IN ANIMAL
SCIENCE ON ADVISEMENT AND COUNSELING

Statements	Total	Responses								Cumulative Rating	Average Rating	Rank		
		Strongly Agree		Agree		Neutral		Disagree					Strongly Disagree	
		N	%	N	%	N	%	N	%				N	%
1. Advisors in the department were well qualified to advise international students.	74	27	36.49	25	33.78	10	13.51	10	13.51	2	2.70	287	3.88	2
2. Advisors of the department were effective in their encouragement to each international student to study and complete assignments.	74	21	28.38	27	36.49	20	27.03	5	6.76	1	1.35	284	3.84	3
3. Advisors of the department were friendly and cooperative in their work with individual students in helping them with personal needs.	74	27	36.49	27	36.49	15	20.27	5	6.76			298	4.03	1
4. Advisors and counselors made an effort to become acquainted with and to understand the culture and customs of international students.	74	9	12.16	25	33.78	18	24.32	15	20.27	7	9.46	236	3.19	8
5. *Advisors and counselors often failed to make an effort to become acquainted with the educational needs of international students.	74	6	8.11	22	29.73	18	24.32	21	28.38	7	9.46	223	3.01	10
6. *Advisors and faculty members did not make themselves available to students outside of class time.	74	2	2.70	9	12.16	12	16.22	34	45.95	17	22.97	277	3.74	4
7. Advisors and counselors of the department were patient and understanding with international students.	74	15	20.27	33	44.59	18	24.32	6	8.11	2	2.70	275	3.72	5
8. *Advisors and counselors of the department at times seemed to show prejudice against international students.	74	1	1.35	12	16.22	23	31.08	31	41.89	7	9.46	253	3.42	7
9. Advisors of the department appeared to happy to be assisting international students.	74	14	18.92	24	32.43	24	32.43	11	14.86	1	1.35	261	3.53	6
10. Advisors and faculty members made a sincere effort, when called upon, to advise and assist international students with problems such as housing, driving and financial problems	74	6	8.11	24	32.43	19	25.68	23	31.08	2	2.70	231	3.12	9

*Negative Statements: reversed in rating scores applied

the survey, reversed to allow for comparison with other positively stated items. A high percentage of the respondents disagreed with the statement that advisors and counselors of the department at times seemed to show prejudice against international students; 41.9 percent disagreed and 9.5 percent strongly disagreed and only one student (1.3 percent) strongly agreed. It appeared that only a very small portion, or an isolated case, felt that advisors and counselors of the department showed prejudice against international students. The statement "Advisors and counselors often failed to make an effort to become acquainted with the educational needs of international students", was stated negatively and ranked last; 29.7 percent of the respondents agreed, 8.1 percent strongly agreed, and only 9.5 percent strongly disagreed. Therefore, it could be stated that over one-third of the respondents felt that advisors and counselors often failed to make an effort to become acquainted with the educational needs of international students.

Courses and Reference Materials

Presented in Table VII are results of data analysis regarding the perceptions of Venezuelan students concerning the adequacy of selected aspects of courses and reference material in the U.S. Animal Science departments.

The three statements which ranked highest were all related to the library service on campus. The three statements were all in the strongly agree level, rating from 4.59 to 4.81. Reaffirming the degree of agreement of these statements was the fact that the percentages of respondents answering to "strongly agree" were 83.8 percent, 81.1 percent, and 79.7 percent for statements seven, five and six, respectively.

TABLE VII

JUDGMENTS OF FORMER VENEZUELAN STUDENTS IN
ANIMAL SCIENCE ON REFERENCE MATERIALS

Statements	Responses												Cumulative Rating	Average Rating	Rank
	Total	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree					
		N	%	N	%	N	%	N	%	N	%				
1. Instructional aids which were used in the department courses were adequate.	74	29	39.19	37	50.00	7	9.46	1	1.35				316	4.27	9
2. Current textbooks and references were used in the Animal Science classes.	74	41	55.41	25	33.78	5	6.76	3	4.05				326	4.41	5
3. Textbooks required of students in the department were relevant and adequate for meeting the needs of students.	74	40	54.05	27	36.49	7	9.46						329	4.45	4
4. The department had available sufficient amounts of reference materials for students to use.	74	39	52.70	28	37.48			7	9.46				321	4.34	7
5. There was a sufficient number and variety of Animal Science reference materials available to students in the campus library.	74	60	81.08	13	17.57					1	1.35		353	4.77	2
6. The library service was excellent.	74	59	79.73	8	10.81			6	8.11	1	1.35		340	4.59	3
7. In general, the library was well supplied with general information materials and references.	74	62	83.78	11	14.86			1	1.35				356	4.81	1
8. The laboratories were well equipped for meeting the needs of the courses.	74	38	51.35	27	36.49	8	10.81			1	1.35		323	4.36	6
9. Laboratories required in the department were relevant and adequate for meeting the needs of the courses.	74	34	45.95	30	40.54	9	12.16			1	1.35		318	4.30	8
10. Laboratory work was in agreement with the course needs (theoretical)	74	32	43.24	22	29.73	16	21.62	3	4.05	1	1.35		303	4.09	11
11. Laboratories were relevant and adequate for teaching practical skills.	74	34	45.95	29	39.19	4	5.41	7	9.46				312	4.22	10

Thus, these responses show that the former Venezuelan students recognized the excellence of the library services in the U.S. universities where they studied.

All the remaining statements had average rating scores ranging from 4.01 to 4.45, which located them at the agree level. Furthermore, the distribution of the responses was high for the strongly agree, 39.2 percent to 54.1 percent, for all these statements. Consequently, it may be surmised that the former Venezuelan students felt that the availability of reference materials, textbooks, instructional aids and laboratories were adequate in terms of their needs.

Instructors and Instruction

Data are presented in Table VIII relative to selected aspects of instructors and instruction in the Animal Science departments.

The negative statement "Instructors of the departments were not prepared for teaching the classes assigned", received an average rating score of 4.28 and ranked number one, which located it at the disagree level. Considering the low percentage of agreement, keeping in mind that this is a negative statement, it is noteworthy that 45.95 percent of the respondents strongly disagreed and 41.9 percent disagreed. Thus, most of the Venezuelan students believed that the instructors were well-prepared for teaching the classes assigned.

A high percentage of respondents agreed that instructional methods and techniques used were up-to-date and appropriate for the courses. None of the former Venezuelan students showed disagreement with the statement regarding this point. Therefore, the response shows that former Venezuelan students felt that the methods and techniques used were

TABLE VIII

JUDGMENTS OF FORMER VENEZUELAN STUDENTS IN ANIMAL
SCIENCE ON INSTRUCTORS AND INSTRUCTION

Statements	Total	Responses										Cumulative Rating	Average Rating	Rank
		Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree				
		N	%	N	%	N	%	N	%	N	%			
1. Instructors of the department were well qualified to teach international students.	74	12	16.22	40	54.05	13	17.57	8	10.81	1	1.35	276	3.73	10
2. Instructional methods and techniques used were up-to-date and appropriate for the courses.	74	26	35.14	35	47.30	13	17.57					309	4.18	2
3. Inspiration and motivation presented by instructors in the department was adequate.	74	14	18.92	37	50.00	21	28.38	2	2.70			285	3.85	7
4. Instructors created an atmosphere in the classroom which exhibited a concern for the welfare of international students.	74	8	10.81	15	20.27	26	35.14	21	28.38	4	5.41	224	3.03	16
5. *Instructors of the department were not prepared for teaching the classes assigned.	74	1	1.35	2	2.70	6	8.11	31	41.89	34	45.95	317	4.28	1
6. Instructors personally exhibited a high degree of confidence.	74	16	21.62	34	45.95	17	22.97	7	9.46			281	3.80	8
7. *Instructors of the department were prejudiced in favor of international students compared to native students.	74	1	1.35	3	4.05	17	22.97	31	41.89	22	29.73	292	3.95	5
8. *Control of classes by instructors was at times hardly adequate.	74	2	2.70	4	5.41	8	10.81	46	62.16	14	18.92	288	3.89	6
9. Instructors of the department made an effort to become acquainted with and to understand the educational needs of international students.	74	1	1.35	22	29.73	25	33.78	19	25.68	7	9.46	213	2.88	17
10. In general, the relationship between instructors and international students was excellent.	74	8	10.81	28	37.84	34	45.95	4	5.41			262	3.54	12
11. *Instructors were not always fair and just in evaluating students' work and assigning grades.	74			8	10.81	15	20.27	41	55.41	10	13.51	275	3.72	11
12. Instructors consistently provided high encouragement for learners.	74	5	6.76	27	36.49	32	43.24	8	10.81	2	2.70	247	3.34	15
13. Objectives of instruction in all courses were clearly presented to students and were within range of student learning capabilities.	74	20	27.03	38	51.35	10	13.51	6	8.11			294	3.97	4
14. Student involvement in classes was encouraged and was readily accepted by instructors	74	9	12.16	45	60.81	14	18.92	6	8.11			279	3.77	9
15. *Relevance of assignments to student needs was often not evident.	74	3	4.05	6	8.11	25	33.78	39	52.70	1	1.35	251	3.39	14
16. Honesty of instructors was evident and had good effects on students.	74	21	28.38	43	58.11	9	12.16			1	1.35	305	4.12	3
17. Instructors were patient and understanding with international students.	74	4	5.41	38	51.35	25	33.78	6	8.11	1	1.35	260	3.51	13

*Negative Statements: reversed in rating scores applied.

current and appropriate for the courses.

The statement about honesty of the instructors received an average rating score of 4.12. On the percentage basis, 28.4 percent responded to "strongly agree" and 58.1 percent to "agree", and only one respondent (1.35 percent) strongly disagreed to the statement. So, the Venezuelan students recognized that the honesty of the instructors was evident and had good effects on students.

The negative statement "Relevance of assignments to students' needs was often not evident" received an average rating score of 3.39. Even though 12 percent of the respondents agreed and one-third were neutral, over 50 percent of the respondents disagreed to the statement. Thus, the responses show that of the former Venezuelan students felt that the relevance of the assignments to student needs was evident.

The statement concerning efforts of instructors to become acquainted with and to understand the educational needs of international students received an average rating score of 2.88, being ranked last. Only one respondent (1.35 percent) strongly agreed to the statement; while on the other hand, 9.5 percent strongly disagreed and 25.7 percent disagreed. So, the responses showed that an appreciable number of former Venezuelan students believed that the instructors of the Animal Science departments did not make an effort to become acquainted with international students and to understand their educational needs.

Animal Science Courses

Presented in Table IX are results of data analysis concerning the perceptions of Venezuelan students as to the adequacy of selected aspects of animal science courses.

TABLE IX

JUDGMENTS OF FORMER VENEZUELAN STUDENTS IN ANIMAL
SCIENCE ON ANIMAL SCIENCE COURSES

Statements	Total	Responses										Cumulative Rating	Average Rating	Rank
		Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree				
		N	%	N	%	N	%	N	%	N	%			
1. The program in Animal Science in the U.S. prepared you very well to work	74	26	35.14	34	45.95	8	10.81	6	8.11			302	4.08	4
2. The practical courses taught you very well for the work you are doing now.	74	21	28.38	38	37.84	12	16.22	10	13.51	3	4.05	276	3.73	10
3. The basic courses (chemistry, biology, etc.) were a very important base for the Animal Science courses.	74	17	22.97	34	45.95	17	22.97	5	6.76	1	1.35	283	3.82	8
4. The Animal Science courses were relevant with your needs for working in your country.	74	19	25.68	34	45.95	15	20.27	4	5.41	2	2.70	286	3.86	7
5. The program in Animal Science in the U.S. adequately prepared you for working in your country.	74	24	32.43	34	45.95	14	18.92	1	1.35	1	1.35	301	4.07	5
6. Courses in animal nutrition were pertinent with your needs.	74	24	32.43	30	40.54	15	20.27	5	6.76			295	3.99	6
7. *You did not have enough practical experiences during your studies in the U.S.	74	6	8.11	14	18.92	13	17.57	24	32.43	17	22.97	254	3.43	12
8. Courses in business (economic, marketing, etc.) were very helpful for your work in your country.	74	7	9.46	12	16.22	43	58.11	4	5.41	8	10.81	228	3.08	14
9. The courses in reproduction (physiology, anatomy, etc.) were up-to-date with your needs for working in your country.	74	34	45.95	23	31.08	13	17.57	4	5.41			309	4.18	2
10. During the laboratory work you had adequate opportunities for practical experience.	74	19	25.68	33	44.59	11	14.86	10	13.51	1	1.35	281	3.80	9
11. Departmental courses in general (genetics, nutrition, reproduction, etc.) were relevant and adequate for meeting the needs for working in your country.	74	26	35.14	30	40.54	15	20.27	3	4.05			301	4.07	5
12. Management courses in Animal Husbandry were useful and practical.	74	7	9.46	9	12.16	49	66.22	3	4.05	6	8.11	230	3.11	13
13. The courses in Genetics (animal breeding) were relevant with your needs for working in your country.	74	15	20.27	28	37.84	23	31.08	8	10.81			272	3.68	11
14. Courses in extension education would have been a useful addition to the courses in Animal Science.	74	16	21.62	22	29.73	32	43.24	4	5.41			272	3.68	11
15. More courses were needed in international or world wide aspects of animal production.	74	32	43.24	27	36.49	10	13.57	5	6.76			308	4.16	3
16. Courses of the department were well organized and properly sequenced.	74	26	35.14	45	60.81	3	4.05					319	4.31	1

*Negative Statement: reversed in rating scores applied.

There was a high level of agreement about the organization and sequence of animal science courses. The responses were: 35.14 percent "strongly agree", 60.8 percent "agree", some at neutral and none at the disagree level. Thus the respondents strongly believed that the courses of the department were well-organized and properly sequenced. The statement "The courses in reproduction were up-to-date with your needs for working in your country" received the second-largest score of 4.18; rated as "agree," this statement had a high concentration of responses at the agree levels, i.e., 45.95 percent "strongly agree" and 31.3 percent "agree". The Venezuelan students thought highly of the reproduction courses they took in the different universities they attended.

A high percentage of former students felt that more courses were needed in international or worldwide aspects of animal production. The pertinent statement ranked third with an average score of 4.16. responses were concentrated in the agree level; 43.24 percent strongly agreed and 36.5 percent agreed. Several other statements about courses also were in the agree category, with average scores ranging from 3.68 to 4.08. From these results we may conclude that the Venezuelan students thought that, in general, some of the departmental courses, such as nutrition, genetics, and the basics (biology, chemistry, etc.) were adequate for their needs.

The average rating on the statement about the adequacy of practical experience while studying in the U.S. was 3.43, placing this negative statement into the neutral level. Even though the average score was 3.43, there were some respondents who agreed with the statement, 8.11 percent "strongly agree," and 18.9 percent "agree", showing that at least one-fourth of the Venezuelan students did not consider that they had

enough practical experience during their studies in the United States.

With respect to the statement "Management courses in animal husbandry were useful and practical," there was a misunderstanding when the questionnaire was translated to Spanish. The word "management" was replaced by the word "administracion" which, in Spanish, was understood as related only to business-type of administration. So, as we try to draw conclusions from this statement, we should understand it as: "Administration courses . . . practical." Regardless of the misunderstanding, the statement received an average score of 3.11. The last-ranked statement was "Courses in business were very helpful for your work in your country." Also rated neutral, this statement with the last one shows that some improvement could be made in the business administration type of courses.

Non-Academic Activities

Judgments of Venezuelan students relating to non-academic activities while studying in the United States are summarized in Table X. Although not to be considered an activity, the statement "The university from which you graduated enjoys a good academic reputation in your country" was included in an attempt to understand the disposition of the former students. This statement received an average rating score of 4.62, ranking at the first place and rating as "strongly agree". The respondents agreed absolutely with the statement; 67.6 percent "strongly agreed" and 29.7 percent agreed; thus, the American universities from which the respondents came enjoy a great academic reputation in Venezuela.

The statement about Community-college relations ranked second with

TABLE X

JUDGMENTS OF FORMER VENEZUELAN STUDENTS IN ANIMAL
SCIENCE ON NON-ACADEMIC ACTIVITIES

Statements	Total	Responses										Cumulative Rating	Average Rating	Rank
		Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree				
		N	%	N	%	N	%	N	%	N	%			
1. Office, classroom and reading room facilities of the Animal Science Department were adequate for the best welfare of students.	74	19	25.68	34	45.95	11	14.86	8	10.81	2	2.70	282	3.81	6
2. The relationship of American students to international students within the department was generally good.	74	13	17.57	28	37.84	18	24.32	9	12.16	6	8.11	255	3.45	9
3. The dorms at the University were adequate and comfortable for living.	74	23	31.08	28	37.84	18	24.32	2	2.70	3	4.05	288	3.89	5
4. The Animal Science Department provided assistance to international students in understanding the culture of the United States.	74	3	4.05	19	25.68	23	31.08	21	28.38	8	10.81	210	2.84	12
5. Travel and tours to attend conventions or meetings of the agricultural organizations (ASAS, ADSA, etc.) were helpful.	74	16	21.62	24	32.43	23	31.08	5	6.76	6	8.11	261	3.53	8
6. *The student organizations at the University were not suitable for participation by international students.	74	11	14.86	19	25.68	18	24.32	18	24.32	8	10.81	215	2.91	11
7. Housing facilities for married students were adequate and comfortable for living.	74	29	39.19	26	35.14	9	12.16	7	9.46	3	4.05	293	3.96	4
8. Language was not a problem at all.	74	15	20.27	22	29.73	11	14.86	15	20.27	11	14.86	237	3.20	10
9. Food services on campus were good in terms of quality and quantity.	74	18	24.32	32	43.24	17	22.97	3	4.05	4	5.41	279	3.77	7
10. *Financial aids programs at the University were not as good as needed for international students.	74	12	16.22	18	24.32	29	39.19	11	14.86	4	5.41	199	2.69	13
11. The varieties of intra-mural sports programs at the physical center at the University were sufficient to meet student needs.	74	28	37.84	32	43.24	11	14.86	3	4.05			307	4.15	3
12. The University from which you graduated enjoys a good academic reputation in your country.	74	50	67.57	22	29.73	1	1.35			1	1.35	342	4.62	1
13. Community-college relations at the city or the University town were good.	74	35	47.30	33	44.59	6	8.11					325	4.39	2

*Negative Statements: reversed in rating scores applied.

a rating score of 4.39, and the statement about the varieties of intramural sports programs at the physical center at the university ranked third with an average rating score of 4.15. This revealed a favorable feeling of the Venezuelan students toward these statements. Statements related to housing facilities for married and single students received average rating scores of 3.96 and 3.89, indicating that housing facilities for either married or single students were considered adequate by the former Venezuelan students. Responses to statements regarding office, classroom and reading room facilities, food services on campus, and traveling on tours to scientific meetings revealed that Venezuelan students felt that these facilities and services were adequate to their needs.

Statements related to the relationship between American and international students within the department and to the language problem, received scores of 3.45 and 3.20, respectively. Although over 55 percent of the respondents agreed that, generally, there were good relations, more than 20 percent of the respondents felt that somehow the relationship between American and international students could be improved; and some Venezuelan students felt that the language was a problem.

The negatively stated statements relating to students' organizations and financial aids received average rating scores of 2.91 and 2.69, respectively. Even though responses on both averaged in the neutral category, the percentage of distribution figures for these statements showed that over 40 percent of the respondents felt that the student organizations and the financial aids programs were inadequate.

The statement regarding assistance to international students in understanding the culture of the United States received an average rating

score of 2.84; and even though it placed in the neutral level, the distribution of the responses showed that 28.4 percent "disagree" and 10.8 "strongly disagree". So, many former Venezuelan students felt that the assistance to the international students in understanding the culture of the United States should be improved by the departments.

Overall Evaluation

The data in Table XI contains the result of the analysis concerning some aspects of an overall evaluation of the departments in which the former Venezuelan students studied. As mentioned earlier in Chapter III, some questions were duplicated in this section, for the purpose of stressing the points stated. Further comparisons among these questions will be made later in this chapter.

The three statements ranked highest were related to the organization of departmental courses, advisement and counseling and the adequacy of instructional methods and techniques. These three statements were all rated as agree, scoring from 4.12 to 4.26. Furthermore, to reaffirm the position of these statements are the agreement percentages; the combined figures of "strongly agree" and "agree" were 94.6, 81.08 and 85.13 percent, respectively, for the three statements. Thus, the former Venezuelan students thought that these stated aspects of the department were satisfactory.

With respect to city provisions and community-university relationships, average scores were 4.04 and 3.93, indicating that most of the respondents agreed to the adequacy of these aspects of their experience in the U.S. Three negative statements referred to the administration and organization of the department, qualifications of instructors, and the

TABLE XI

OVERALL EVALUATION BY FORMER VENEZUELAN STUDENTS IN ANIMAL SCIENCE

Statements	Total	Responses										Cumulative Rating	Average Rating	Rank
		Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree				
		N	%	N	%	N	%	N	%	N	%			
1. *As a whole, the total pattern of administration and organization for the department was somewhat lacking.	74			4	5.41	17	22.97	37	50.00	16	21.62	287	3.88	6
2. The Head of the Department did an outstanding job in administrating the Animal Science program.	74	13	17.51	33	44.59	22	29.73	6	8.11			275	3.72	8
3. Personnel responsible for student advisement and counseling were well qualified.	74	30	40.54	30	40.54	9	12.16	4	5.41	1	1.35	306	4.14	2
4. Courses of the department were well organized and properly sequenced.	74	26	35.14	44	59.46	2	2.70	1	1.35	1	1.35	315	4.26	1
5. *Textbooks, instructional aids, etc. were not adequate and relevant for meeting the needs of students in the program.	74	6	8.11	7	9.46	4	5.41	42	56.72	15	20.27	275	3.72	8
6. Instructional methods and techniques used by the department staff were up-to-date and appropriate for the courses.	74	23	31.08	40	54.05	8	10.81	3	4.05			305	4.12	3
7. *Instructors were not well qualified for teaching international students.	74			6	8.11	15	20.27	38	51.35	15	20.27	284	3.84	7
8. The relationship between the instructors and international students was excellent.	74	8	10.81	30	40.54	28	37.84	7	9.46	1	1.35	259	3.50	10
9. Non-academic activities associated with the University campus were excellent.	74	11	14.86	32	43.24	25	33.78	5	6.76	1	1.35	269	3.64	9
10. *In general, the relationship between international students and American students was not good.	74	2	2.70	13	17.57	22	29.73	27	36.49	10	13.51	252	3.41	11
11. There were adequate provisions in the city in which the University was located to adequately provide for the needs of international students.	74	27	36.49	30	40.54	11	14.86	5	6.76	1	1.35	299	4.04	4
12. The relationship between the community and the university was good from the standpoint of international students.	74	18	24.32	38	51.35	14	18.92	3	4.05	1	1.35	291	3.93	5

*Negative Statements: reversed in rating scores applied.

adequacy of textbooks and reference materials. The responses to these negative statements showed that the former Venezuelan students felt that there were no particular problems with regard to these matters.

The last-ranked statement relating to the relationship between international students and American students received an average score of 3.41. Even though 50 percent viewed the relations between international and American students as a good one, over 20 percent of the respondents did not agree. Thus, some of the respondents believed that the relations between American and international students could be improved.

Advanced Graduate Work

Data presented in Table XII contains the results of analysis concerning the opinion of the former Venezuelan graduate students who obtained advanced degrees (M.S. or Ph.D.) in an Animal Science department in the United States.

Although there were 50 out of the 74 respondents who completed their graduate work (see Table I), there were only 49 who answered this section of the questionnaire.

Ranked in first place was the statement concerning the adequacy of the research facilities in the U.S. university, which received an average rating of 4.57. This statement was agreed upon by the majority; 93.9 percent of the respondents either agreed or strongly agreed with the statement. Thus, former Venezuelan graduate students considered that the research facilities in the U.S. university where they studied were adequate, as compared to facilities in Venezuela.

The second-ranked statement, "The research project was a worthwhile

TABLE XII

JUDGMENTS OF FORMER VENEZUELAN STUDENTS IN ANIMAL
SCIENCE ON ADVANCED GRADUATE WORK

Statements	Total	Responses										Cumulative Rating	Average Rating	Rank
		Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree				
		N	%	N	%	N	%	N	%	N	%			
1. Assistance and cooperation in working on research problems or thesis by instructors was quite adequate.	49	20	40.82	20	40.82	5	10.20	3	6.12	1	2.04	202	4.12	4
2. The thesis topic was relevant to your country's needs.	49	14	28.57	14	28.57	12	24.49	8	16.33	1	2.04	179	3.65	6
3. The thesis topic was selected mainly by your advisor rather than by yourself.	49	9	18.37	10	20.41	8	16.33	16	32.65	6	12.24	147	3.00	8
4. It would have been better to have done the research project in your own country rather than in United States.	49	11	22.45	8	16.33	10	20.41	9	18.37	11	22.45	146	2.98	9
5. The research facilities were more adequate in the U.S. University.	49	32	65.31	14	28.57	2	4.08	1	2.04			224	4.57	1
6. *In the U.S. University library there were less current references and facilities.	49	3	6.12	1	2.04			13	26.53	32	65.31	217	4.43	3
7. If the research would have been done in your own country, other people associated with the research would have become knowledgeable in the area.	49	10	20.41	13	26.53	22	44.90	4	8.16			176	3.59	7
8. *Language difficulties were a problem in the development of the research work.	49	2	4.08	9	18.37	8	16.33	18	36.73	12	24.49	176	3.59	7
9. The research project was a worthwhile and rewarding experience.	49	30	61.22	14	28.57	5	10.20					221	4.51	2
10. It would have been better to have worked on a specific problem relevant to the needs of your country.	49	21	42.86	12	24.49	9	18.37	5	10.20	2	4.08	192	3.92	5

*Negative Statements: reversed in rating scores applied.

and rewarding experience" received a rating of 4.51. Almost 90 percent of the respondents agreed with the statement. The negative statement "In the U.S. university library, there were less current references and facilities" ranked third with a rating of 4.43. The responses showed a disagreement of more than 90 percent, indicating that respondents felt that the U.S. universities had more current references and facilities than universities in Venezuela. Over 80 percent of the respondents believed that they had received adequate assistance and cooperation in working on research problems or a thesis.

Four statements were concerned with whether or not it would have been better to have done the thesis in Venezuela or whether the problem on which they worked was relevant to Venezuelan needs. The first three statements received average scores ranging from 3.59 to 3.93. And the last-ranked statement had an average rating of 2.98. Over 67 percent of the respondents agreed that it would have been better to have worked on a problem more relevant to Venezuelan needs, whereas over 57 percent agreed that their thesis topic was relevant to the needs of their country. Almost 47 percent agreed that other people associated with the research would have become knowledgeable in the area if the research had been done in Venezuela. Concerning the matter of whether it would have been better to have done the research project in their own country rather than in the U.S., the responses were evenly spread in all categories, with 22.45 percent of both "strongly agree" and "strongly disagree". The negative statement "Language difficulties were a problem in the development of the research work" received a score of 3.59.

Although over 60 percent of the respondents disagreed with the statement, 22.5 percent agreed. Therefore, language difficulties were

believed by some Venezuelan graduate students to be a problem in the development of their research.

Opinions and Judgments of Former Students Who
Had Returned to Venezuela as Compared to
Judgments of Those Remaining in the
U.S. on the Effectiveness of
Selected Aspects of the
U.S. Animal Science
Program

Administration and Organization

Table XIII contains the results of the comparison of judgments of former Venezuelan students who had returned to Venezuela and of those who were still residing in the United States concerning some aspects of the administration and organization of the Animal Science Department. There were no significant differences for any of the statements in this table, which means that both groups felt the same regarding the administration and organization of the departments. However, some observations could be made on a number of statements. Statement "The administration of the Animal Science department had well-qualified personnel as instructors" ranked first in both groups, showing agreement on qualifying this statement as the most important. The statement "The head of the department did an outstanding job in administrating the animal science program" was ranked second by former Venezuelan students and first by the resident students. On the other hand, the statement "The administration of the department, at times, failed to properly advise international students concerning rules and regulations" ranked last in both groups.

TABLE XIII

JUDGMENTS OF FORMER STUDENTS RETURNED TO VENEZUELA COMPARED
TO JUDGMENTS OF THOSE STILL IN U.S.A. (O.S.U. 1980,
SENIORS) - ADMINISTRATION AND ORGANIZATION

Statements	Former Students			1980 Seniors			"F" Ratio	"T" Value	Significance
	Number	Average Rating	Variance	Number	Average Rating	Variance			
1. The administration of the Animal Science Department had well-qualified personnel as instructors.	74	4.53	.64	9	4.33	.50	1.280	.716	none
2. The administration of the department was concerned with meeting the needs of all students.	74	3.55	1.10	9	3.56	.53	2.075	-.028	none
3. The administration of the department played an active role in student functions and activities.	74	3.65	1.00	9	3.89	.61	1.639	-.693	none
4. The Head of the department did an outstanding job in administrating the Animal Science program.	74	4.01	.67	9	4.33	.50	1.340	-1.122	none
5. The Head of the department had a good relationship with international students.	74	3.73	1.43	9	3.89	.61	2.344	-.390	none
6. The Head of the department appeared to be somewhat prejudiced against international students.	74	3.62	1.17	9	3.78	1.19	1.017	-.419	none
7. Secretaries and other staff of the department were always friendly or very cooperative with international students.	74	3.92	.95	9	3.78	.94	1.011	.407	none
8. The administration of the department at times failed to properly advise international students concerning rules and regulations.	74	3.05	1.26	9	2.78	.69	1.826	.697	none
9. Flexibility in administration of the department concerning international students was most satisfactory.	74	3.50	1.29	9	3.33	1.00	1.290	.429	none
10. The administration of the department was concerned with meeting the needs of international students.	74	3.05	1.15	9	3.11	.61	1.885	-.162	none

In the same manner, the statement about the administration in meeting needs of international students also ranked next to the last by those who still resided in the U.S. Thus, both groups were dissatisfied with this aspect of the performance of administrators in Animal science Departments.

Advisement and Counseling

Presented in Table XIV are the results of the comparison of judgments of former Venezuelan students concerning some aspects of the advisement and counseling given by faculty members of the Animal Science departments they attended. There were no significant differences between judgments of the Venezuelan students as reflected in the statements in this section. However, the three statements ranked as the top ones by former Venezuelan students who returned, were also ranked among the first three by those who were still in the U.S. The three statements ranked last by the former Venezuelan students who had returned, were also ranked as the last three by those who were still in the U.S., thus showing agreement among the two groups in regard to the facts presented in these statements.

Reference Materials

In Table XV are the results of the comparison between the judgments of former students returned to Venezuela and the judgments of those who were still in the United States, regarding some aspects of reference materials.

Three statements, all related to the sufficient availability of general and animal science reference materials in the library and in the

TABLE XIV

JUDGMENTS OF FORMER STUDENTS RETURNED TO VENEZUELA COMPARED
TO JUDGMENTS OF THOSE STILL IN U.S.A. (O.S.U. 1980,
SENIORS) - ADVISEMENT AND COUNSELING

Statements	Former Students			1980 Seniors			"F" Ratio	"T" Value	Significance
	Number	Average Rating	Variance	Number	Average Rating	Variance			
1. Advisors in the department were well qualified to advise international students.	74	3.88	1.29	9	3.67	1.25	1.032	.525	none
2. Advisors of the department were effective in their encouragement to each international student to study and complete assignments.	74	3.84	.93	9	3.67	.75	1.240	.504	none
3. Advisors of the department were friendly and co-operative in their work with individual students in helping them with personal needs.	74	4.03	.85	9	3.78	1.44	1.694	.743	none
4. Advisors and counselors made an effort to become acquainted with and to understand the culture and customs of international students.	74	3.19	1.39	9	3.11	1.36	1.022	.192	none
5. Advisors and counselors often failed to make an effort to become acquainted with the educational needs of international students.	74	3.01	1.30	9	3.22	.44	2.955	-.540	none
6. Advisors and faculty members did not make themselves available to students outside of class time.	74	3.74	1.07	9	4.11	.36	2.972	-1.048	none
7. Advisors and counselors of the department were patient and understanding with international students.	74	3.72	.95	9	3.56	.53	1.792	.476	none
8. Advisors and counselors of the department at times seemed to show prejudice against international students	74	3.42	.85	9	3.44	.78	1.090	-.062	none
9. Advisors of the department appeared to be happy to be assisting international students.	74	3.53	1.02	9	3.44	.78	1.308	.255	none
10. Advisors and faculty members made a sincere effort, when called upon, to advise and assist international students with problems such as housing, driving and financial problems.	74	3.12	1.07	9	2.67	.50	2.140	1.266	none

TABLE XV

JUDGMENTS OF FORMER STUDENTS RETURNED TO VENEZUELA COMPARED
TO JUDGMENTS OF THOSE STILL IN U.S.A. (O.S.U. 1980,
SENIORS) - REFERENCE MATERIALS

Statements	Former Students			1980 Seniors			"F" Ratio	"T" Value	Significance
	Number	Average Rating	Variance	Number	Average Rating	Variance			
1. Instructional aids which were used in the department courses were adequate.	74	4.27	.47	9	3.67	1.00	2.128	2.352 [†]	P<.05
2. Current textbooks and references were used in the Animal Science classes.	74	4.41	.63	9	4.00	.25	2.520	1.509	none
3. Textbooks required of students in the department were relevant and adequate for meeting the needs of students.	74	4.45	.44	9	3.78	.69	1.568	2.784 ^{††}	P<.01
4. The department had available sufficient amounts of reference materials for students to use.	74	4.34	.80	9	3.56	1.28	1.600	2.400 [†]	P<.05
5. There was a sufficient number and variety of Animal Science reference materials available to students in the campus library.	74	4.77	.34	9	3.89	.86	2.529*	2.781 [†]	P<.05
6. The library service was excellent.	74	4.59	.90	9	4.33	.50	1.800	.794	none
7. In general, the library was well supplied with general information materials and references.	74	4.81	.24	9	4.33	.25	1.042	2.770 ^{††}	P<.01
8. The laboratories were well equipped for meeting the needs of the courses.	74	4.36	.62	9	4.00	.25	2.480	1.335	none
9. Laboratories required in the department were relevant and adequate for meeting the needs of the courses.	74	4.30	.62	9	3.89	.11	5.636*	2.857 [†]	P<.05
10. Laboratory work was in agreement with the course needs (theoretical).	74	4.09	.94	9	3.89	.86	1.093	.587	none
11. Laboratories were relevant and adequate for teaching practical skills.	74	4.22	.86	9	4.11	.11	7.818*	.712	none

*Variances significantly different (P<.05).

†Averages significantly different (P<.05).

††Averages significantly different (P<.01).

department, showed significant differences between the judgments of former Venezuelan students. Those students who had returned strongly agreed with the fact that the library was well-supplied with general reference materials, while those who were still in the U.S. only agreed to the statement; ratings varied significantly ($P < .01$) from 4.81 to 4.33. Likewise, regarding animal science reference materials, students who had returned strongly agreed to the fact of a well-supplied library, while those who were still in the U.S. only agreed to it; ratings varied ($P < .05$) from 4.77 to 3.89. Moreover, both groups of Venezuelan students agreed with the department's having sufficient reference materials. Students who had returned rated it higher than those who were still in the U.S.; ratings varied ($P < .05$) from 4.34 to 3.56. The group of Venezuelan students who were still in the United States consistently gave lower scores, showing lower appreciation for the facilities and availability of reference materials than those who had returned and had felt the lack of available reference materials, thus really being able to appreciate what they had while in the United States.

Rating of the statement concerning the relevance and adequacy of the textbooks required for meeting the needs of the students differed significantly ($P < .01$) from 4.45, given by former students who had returned, to 3.78 given by those who were still in the U.S. shows their lower appreciation for what they had, as compared to those who had returned to Venezuela. The experience of trying to apply the knowledge received gave the latter group a higher appreciation for the adequacy and relevance of the textbooks used.

The significantly lower ratings given by those Venezuelan students who were still in the U.S. showed lower esteem for the relevance and

adequacy of the laboratory work required by the departments, and for the adequacy of the instructional aids used in the departmental courses. The statements being considered (9 and 1) were rated "agree" for both groups of Venezuelan students, and the average scores were significantly different ($P < .05$) in both cases.

Instructors and Instruction

Comparison of the judgments of former Venezuelan students on some selected aspects related to the instructors and the instruction received in the U.S. is summarized in Table XVI.

Out of 17 statements presented to the respondents in this section, only one was answered in a significantly different way by the two groups compared. The statement regarding instructional methods and techniques used by the faculty and their currency was rated agree by both groups; but those Venezuelan students who had returned to Venezuela gave a rating of 4.18, significantly higher ($P < .05$) than 3.56 given by those who were still in the U.S. However, it is of interest to note that students who had returned to Venezuela had a lower (NS) perception concerning the effort made by the instructors to become acquainted with and to understand the educational needs of international students.

Animal Science Courses

In Table XVII are the results of the comparisons between students who had returned home and those still in the U.S. regarding the adequacy of the animal science courses.

The students who had returned showed higher appreciation for the organization and sequence of the courses in the department. The

TABLE XVI

JUDGMENTS OF FORMER STUDENTS RETURNED TO VENEZUELA COMPARED
TO JUDGMENTS OF THOSE STILL IN U.S.A. (O.S.U. 1980,
SENIORS) - INSTRUCTORS AND INSTRUCTION

Statements	Former Students			1980 Seniors			"F" Ratio	"T" Value	Significance
	Number	Average Rating	Variance	Number	Average Rating	Variance			
1. Instructors of the department were well qualified to teach international students.	74	3.73	.83	9	3.22	1.69	2.036	1.510	none
2. Instructional methods and techniques used were up-to-date and appropriate for the course.	74	4.18	.50	9	3.56	.53	1.060	2.477 [†]	P<.05
3. Inspiration and motivation presented by instructors in the department was adequate.	74	3.85	.57	9	3.78	.94	1.649	.255	none
4. Instructors created an atmosphere in the classroom which exhibited a concern for the welfare of international students.	74	3.03	1.15	9	2.56	1.28	1.113	1.235	none
5. Instructors of the department were not prepared for teaching the classes assigned.	74	4.28	.70	9	4.11	.36	1.944	.590	none
6. Instructors personally exhibited a high degree of confidence.	74	3.80	.79	9	3.78	.44	1.795	.065	none
7. Instructors of the department were prejudiced in favor of international students compared to native students.	74	3.95	.82	9	3.67	.50	1.640	.893	none
8. Control of classes by instructors was at times hardly adequate.	74	3.89	.76	9	3.44	.53	1.434	1.485	none
9. Instructors of the department made an effort to become acquainted with and to understand the educational needs of international students.	74	2.88	.99	9	3.22	.69	1.435	-.983	none
10. In general, the relationship between instructors and international students was excellent.	74	3.54	.58	9	3.33	1.25	2.155	.740	none
11. Instructors were not always fair and just in evaluating students' work and assigning grades.	74	3.72	.70	9	3.11	1.61	2.300	1.944	none
12. Instructors consistently provided high encouragement for learners.	74	3.34	.75	9	3.44	.53	1.415	-.332	none
13. Objectives of instruction in all courses were clearly presented to students and were within range of student learning capabilities.	74	3.97	.74	9	3.78	.44	1.682	.639	none
14. Student involvement in classes was encouraged and was readily accepted by instructors.	74	3.77	.59	9	3.67	.25	2.360	.380	none
15. Relevance of assignments to student needs was often not evident.	74	3.39	.68	9	3.33	.25	2.720	.213	none
16. Honesty of instructors was evident and had good effects on students.	74	4.12	.52	9	3.78	1.19	2.288	1.258	none
17. Instructors were patient and understanding with international students.	74	3.51	.61	9	3.44	1.53	2.508*	.166	none

*Variances significantly different (P<.05).
Averages significantly different (P<.05).

TABLE XVII

JUDGMENTS OF FORMER STUDENTS RETURNED TO VENEZUELA COMPARED
TO JUDGMENTS OF THOSE STILL IN U.S.A. (O.S.U. 1980,
SENIORS) - ANIMAL SCIENCE COURSES

Statements	Former Students			1980 Seniors			"F" Ratio	"T" Value	Significance
	Number	Average Rating	Variance	Number	Average Rating	Variance			
1. The program in Animal Science in the U.S. prepared you very well to work.	74	4.08	.79	9	4.11	.36	2.194	-.098	none
2. The practical courses taught you very well for the work you are doing now.	74	3.73	1.30	9	3.33	.25	5.200*	1.878	none
3. The basic courses (chemistry, biology, etc.) were a very important base for the Animal Science courses.	74	3.82	.83	9	3.56	1.28	1.542	.788	none
4. The Animal Science courses were relevant with your needs for working in your country.	74	3.86	.91	9	3.22	.44	2.068	1.951	none
5. The program in Animal Science in the U.S. adequately prepared you for working in your country.	74	4.07	.69	9	3.00	.50	1.380	3.700**	P<.01
6. Courses in animal nutrition were pertinent with your needs.	74	3.99	.81	9	3.56	1.03	1.272	1.336	none
7. You did not have enough practical experiences during your studies in the U.S.	74	3.43	1.59	9	3.11	.86	1.849	.736	none
8. Courses in business (Economic, Marketing, etc.) were very helpful for your work in your country.	74	3.08	1.03	9	2.89	1.11	1.078	.528	none
9. The courses in Reproduction (physiology, anatomy, etc.) were up-to-date with your needs for working in your country.	74	4.18	.83	9	3.67	.75	1.107	1.593	none
10. During the laboratory work you had adequate opportunities for practical experience.	74	3.80	1.04	9	3.89	.36	2.889	-.259	none
11. Departmental courses in general (Genetics, Nutrition, Reproduction, etc.) were relevant and adequate for meeting the needs for working in your country.	74	4.07	.72	9	3.78	.44	1.636	.987	none
12. Management courses in Animal Husbandry were useful and practical.	74	3.11	.86	9	3.56	.53	1.623	-1.402	none
13. The courses in Genetics (animal breeding) were relevant with your needs for working in your country.	74	3.68	.85	9	3.44	.78	1.090	.704	none
14. Courses in extension education would have been a useful addition to the courses in Animal Science.	74	3.68	.77	9	4.11	.61	1.262	-1.403	none
15. More courses were needed in international or worldwide aspects of animal production	74	4.16	.82	9	4.00	.50	1.640	.510	none
16. Courses of the department were well organized and properly sequenced.	74	4.31	.30	9	3.78	.69	2.300	2.581*	P<.05

*Variances significantly different (P<.05).

*Averages significantly different (P<.05).

**Averages significantly different (P<.01).

statement was rated agree by both groups but, the score of 4.31 given by the former students who had returned was higher ($P < .05$) than 3.78 given by those who were still in the U.S. Concerning the matter of how well the program in animal science in the U.S. adequately prepared students for working in their country, the students who had returned to Venezuela gave a rating of 4.07, which was significantly higher ($P < .01$) than 3.00 given by those students who were still in the U.S. Thus, former Venezuelan students, at work in Venezuela, had a higher opinion of the adequacy of the preparation they received while in the U.S.

The rest of the statements in this section showed no significant differences between judgments of both groups of Venezuelan students.

Non-Academic Activities

Information regarding opinions of Venezuelan students about non-academic activities in American universities is summarized in Table XVIII. Although not to be considered an activity, as explained earlier in this chapter, the statement "The university from which you graduated enjoys a good academic reputation in your country" was ranked first by the former Venezuelan students who had returned, with a rating of 4.62, while the Venezuelan students who were still in the U.S. ranked it second with a lower ($P < .05$) rating of 4.00. Thus, former Venezuelan students who had returned to Venezuela categorized higher ($P < .05$) the reputation of the universities from which they graduated have in Venezuela. However, regardless of the significant difference of the judgments, both groups ranked this statement very high, either first or second.

Former Venezuelan students who had returned to Venezuela showed

TABLE XVIII

JUDGMENTS OF FORMER STUDENTS RETURNED TO VENEZUELA COMPARED
TO JUDGMENTS OF THOSE STILL IN U.S.A. (O.S.U. 1980,
SENIORS) - NON-ACADEMIC ACTIVITIES

Statements	Former Students			1980 Seniors			F ² Ratio	"t" Value	Significance
	Number	Average Rating	Variance	Number	Average Rating	Variance			
1. Office, classroom and reading room facilities of the Animal Science Department were adequate for the best welfare of students.	74	3.81	1.06	9	3.67	1.25	1.179	.382	none
2. The relationship of American students to international students within the department was generally good.	74	3.45	1.35	9	3.22	1.69	1.252	.554	none
3. The dorms at the University were adequate and comfortable for living.	74	3.89	1.03	9	3.44	.53	1.943	1.287	none
4. The Animal Science Department provided assistance to international students in understanding the culture of the United States.	74	2.84	1.12	9	2.67	.75	1.493	.463	none
5. Travel and tours to attend conventions or meetings of the agricultural organizations (ASAS, ADSA, etc.) were helpful.	74	3.53	1.32	9	3.33	.50	2.640	.509	none
6. The student organizations at the University were not suitable for participation by international students.	74	2.91	1.54	9	3.00	1.00	1.540	-.209	none
7. Housing facilities for married students were adequate and comfortable for living.	74	3.96	1.24	9	3.78	.69	1.797	.468	none
8. Language was not a problem at all.	74	3.20	1.89	9	2.67	1.75	1.080	1.096	none
9. Food services on campus were good in terms of quality and quantity.	74	3.77	1.08	9	2.78	1.19	1.102	2.685 ⁺⁺	P<.01
10. Financial aids programs at the University were not as good as needed for international students.	74	2.69	1.18	9	2.56	.53	2.226	.349	none
11. The varieties of intra-mural sports programs at the physical center at the University were sufficient to meet student needs.	74	4.15	.68	9	4.11	.36	1.889	.141	none
12. The University from which you graduated enjoys a good academic reputation in your country.	74	4.62	.43	9	4.00	.75	1.744	2.585 ⁺	P<.05
13. Community-college relations at the city or the University town were good.	74	4.39	.41	9	3.56	1.03	2.512 [*]	2.396 ⁺	P<.05

*Variances significantly different (P<.05).

+Averages significantly different (P<.05).

++Averages significantly different (P<.01).

higher esteem for the food services on campus in terms of quantity and quality. The students who had returned to Venezuela gave a rating of 3.77, rating the statements as agree, which was significantly higher ($P < .01$) than 2.78 given by those students who were still in the U.S., which only rated the statement as neutral. Although the Venezuelan students who were still in the U.S. showed lower appreciation for the food services, it might have been, since these particular groups, on the average, were in the U.S. a few years after the other group, that food services really had lowered the quality and quantity.

The statement "Community-college relations at the city or the university town were good" was rated agree by both groups, though the score of 4.39 given by the former students who had returned was higher ($P < .05$) than 3.56 given by those students who were still in the U.S.

All remaining statements in this section showed no significant differences between judgments of both groups of Venezuelan students.

Overall Evaluation

Comparison of the judgments between groups of Venezuelan students as an overall evaluation of the departments is compiled in Table XIX. Two statements related to the community-college relations and adequacy of provisions by the city for the needs of international students were rated agree by former Venezuelan students who had returned with ratings of 4.04 and 3.93, respectively. On the other hand, both statements were rated neutral by those students who were still in the U.S. with significantly lower ($P < .01$) scores of 3.00 and 2.78, respectively.

Remaining statements from this section showed no significant differences between the judgments of the two groups of Venezuelan students.

TABLE XIX

JUDGMENTS OF FORMER STUDENTS RETURNED TO VENEZUELA COMPARED
TO JUDGMENTS OF THOSE STILL IN U.S.A. (O.S.U. 1980,
SENIORS) - OVERALL EVALUATION

Statements	Former Students			1980 Seniors			"F" Ratio	"t" Value	Significance
	Number	Average Rating	Variance	Number	Average Rating	Variance			
1. As a whole, the total pattern of administration and organization for the department was somewhat lacking.	74	3.88	.66	9	3.78	.44	1.500	.355	none
2. The Head of the Department did an outstanding job in administrating the Animal Science program.	74	3.72	.73	9	4.00	.25	2.920	-.960	none
3. Personnel responsible for student advisement and counseling were well qualified.	74	4.14	.86	9	3.56	1.53	1.779	1.707	none
4. Courses of the department were well organized and properly sequenced.	74	4.26	.49	9	4.11	.36	1.361	.615	none
5. Textbooks, instructional aids, etc. were not adequate and relevant for meeting the needs of students in the program.	74	3.72	1.30	9	3.67	1.25	1.040	.124	none
6. Instructional methods and techniques used by the department staff were up-to-date and appropriate for the courses.	74	4.12	.57	9	3.67	.75	1.316	1.663	none
7. Instructors were not well qualified for teaching international students.	74	3.84	.71	9	3.22	1.69	2.380	1.955	none
8. The relationship between the instructors and international students was excellent.	74	3.50	.75	9	3.33	1.25	1.667	.539	none
9. Non-academic activities associated with the University campus were excellent	74	3.64	.76	9	3.22	1.44	1.896	1.308	none
10. In general, the relationship between international students and American students was not good.	74	3.41	1.04	9	3.33	1.50	1.442	.218	none
11. There were adequate provisions in the city in which the University was located to adequately provide for the needs of international students.	74	4.04	.92	9	3.00	1.75	1.902	2.943 ⁺⁺	P<.01
12. The relationship between the community and the university was good from the standpoint of international students.	74	3.93	.72	9	2.78	.94	1.306	3.783 ⁺⁺	P<.01

⁺⁺Averages significantly different (P<.01).

Advanced Graduate Work

In Table XX are the results of the comparison between the judgments of former Venezuelan graduate students who obtained advanced degrees (M.S. or Ph.D.) and had returned, and the judgments of Venezuelan graduate students who were still going to school in 1980.

As explained earlier, there were 49 completed questionnaires from those who had returned and six completed questionnaires from Venezuelan graduate students who were in the Animal Science Department at Oklahoma State University in 1980.

There were significant differences ($P < .05$) between the rating given by the two groups of Venezuelan graduate students with regard to only one statement. The statement "It would have been better to have done the research project in your own country rather than in the United States" received the lowest score in both groups, thus ranking last. The rating of 2.98 given by those graduate students who had returned was significantly higher ($P < .05$) than 1.67 given by those graduate students who were still in the U.S. The statement rated as "neutral" and "disagree," respectively. Although there was a significant difference, an important fact to consider is that both groups gave to this statement the lowest score and ranked it last. Thus, both groups of Venezuelan graduate students agreed to the fact that it would not have been better to have done the research project in Venezuela rather than in the United States.

At this point it would be pertinent to point out, concerning two statements related to the adequacy of the research facilities in the U.S. university and to whether or not the research project was a worthwhile and rewarding experience, that the group of Venezuelan graduate

TABLE XX

JUDGMENTS OF FORMER GRADUATE STUDENTS RETURNED TO VENEZUELA COMPARED TO
 JUDGMENTS OF THOSE STILL IN U.S.A. (O.S.U. 1980, VENEZUELAN
 GRADUATE STUDENTS) - SELECTED ASPECTS OF THEIR EXPERI-
 ENCE IN U.S. ANIMAL SCIENCE DEPARTMENTS

Statements	Former Graduate Students			Present Graduate Students			"F" Ratio	"T" Value	Significance
	Number	Average Rating	Variance	Number	Average Rating	Variance			
1. Assistance and cooperation in working on research problems or theses by instructors was quite adequate.	49	4.12	.94	6	4.33	.67	1.403	-.508	none
2. The thesis topic was relevant to your country's needs.	49	3.65	1.27	6	3.83	1.77	1.394	-.363	none
3. The thesis topic was selected mainly by your advisor rather than by yourself.	49	3.00	1.79	6	2.50	1.90	1.061	.862	none
4. It would have been better to have done the research project in your own country rather than in the United States.	49	2.98	2.19	6	1.67	1.47	1.490	2.079 [†]	P<.05
5. The research facilities were more adequate in the U.S. University.	49	4.57	.46	6	5.00	0		-1.540	none
6. In the U.S. University library there were less current references and facilities.	49	4.43	1.13	6	4.83	.17	6.647*	-1.764	none
7. If the research would have been done in your own country, other people associated with the research would have become knowledgeable in the area.	49	3.59	.83	6	3.50	.70	1.186	.230	none
8. Language difficulties were a problem in the development of the research work.	49	3.59	1.37	6	4.17	.57	2.404	-1.179	none
9. The research project was a worthwhile and rewarding experience.	49	4.51	.46	6	5.00	0		-1.755	none
10. It would have been better to have worked on a specific problem relevant to the needs of your country.	49	3.92	1.41	6	3.67	2.27	1.610	.473	none

*Variances significantly different (P<.05).

[†]Averages significantly different (P<.05).

students who were still in the U.S. gave a rating of 5.00 to both these statements. This means that all the students answered these statements "strongly agree". Therefore, the data for these statements did not show variances; and because there is not a division by zero, the ratio "F" could not be calculated. Thus, the decision as to which formula to use for calculating the "t" value could not be made. Consequently, it was assumed that the variances for both groups were homogeneous, based upon the fact that for both statements the variances of the group of graduate students who had returned were the lowest of all; the variance of 0.46 tends to be homogeneous to zero rather than significantly different from zero. Thus, the formula of the pool variances for the "t" model calculations was used.

Overall Evaluation of the Sensitivity of the Instrument

In Table XXI are the results of the comparison, through a "t" test, between the responses of specific statements which were duplicated in the section "Overall Evaluation". The purpose of this duplication, as stated previously (Chapter III, p. 31), was to stress specific matters and to compare the responses as a test for the sensitivity of the questionnaire.

Statements three, four, six and eight were all positive in both instances. All four statements received a rating of "agree" with average scores of 4.14 vs. 3.88 (NS), 4.26 vs. 4.31 (NS), 4.12 vs. 4.18 (NS), and 3.50 vs. 3.54 (NS), respectively, showing respondents constant in their answers to these statements. Likewise, for statements seven and ten, which were first, positive statements and second, negative ones.

TABLE XXI

COMPARISON BETWEEN PURPOSELY DUPLICATED QUESTIONS THROUGHOUT THE
QUESTIONNAIRE FOR A BETTER OVERALL APPRECIATION OF THE
JUDGMENTS OF FORMER VENEZUELAN STUDENTS

	Responses Duplication			Original Question			"F" Ratio	"T" Value	Significance
	Number	Average Rating	Variance	Question Location	Average Rating	Variance			
1. As a whole, the total pattern of administration and organization for the department was somewhat lacking.									
2. The Head of the Department did an outstanding job in administrating the Animal Science program.	74	3.72	.73	A-4	4.01	.67	1.090	-2.108 [‡]	P<.05
3. Personnel responsible for student advisement and counseling were well qualified.	74	4.14	.86	B-1	3.88	1.29	1.500	1.525	none
4. Courses of the department were well organized and properly sequenced.	74	4.26	.49	E-16	4.31	.30	1.633*	-.484	none
5. Textbooks, instructional aids, etc. were not adequate and relevant for meeting the needs of students in the program.	74	3.72	1.30	C-3	4.45	.44	2.955*	-4.761 ^{††}	P<.01
6. Instructional methods and techniques used by the department staff were up-to-date and appropriate for the courses.	74	4.12	.57	D-2	4.18	.50	1.140	-.499	none
7. Instructors were not well qualified for teaching international students.	74	3.84	.71	D-1	3.73	.83	1.169	.763	none
8. The relationship between the instructors and international students was excellent.	74	3.50	.75	D-10	3.54	.58	1.293	-.298	none
9. Non-academic activities associated with the University campus were excellent.									
10. In general, the relationship between international students and American students was not good.	74	3.41	1.04	F-2	3.45	1.35	1.298	-.223	none
11. There were adequate provisions in the city in which the University was located to adequately provide for the needs of international students.									
12. The relationship between the community and the university was good from the standpoint of international students.	74	3.93	.72	F-13	4.39	.41	1.756*	-3.722 ^{††}	P<.01

*Variances significantly different (P<.05).

[‡]Averages significantly different (P<.05).

^{††}Averages significantly different (P<.01).

Statement seven was rated agree in both instances with scores of 3.84 and 3.78 (NS). Statement ten was rated neutral both times with scores of 3.41 and 3.45 (NS).

The statement "The head of the department did an outstanding job in administrating the animal science program," although rating as "agree" both times, received a rating of 4.01 the first time, which was higher ($P < .05$) than 3.72 it received the second time. Thus, since the first time the statement was presented (Section A, Statement 4), the respondents lost sensitivity in regard to the job done by the head of the department.

The statement related to the adequacy and relevance of the textbooks and instructional aids used, was presented the first time as a positive statement (Section C, Statement 3); and the duplication was stated negatively. Although it was rated agree in both instances, the ratings received were 4.45 the first time and 3.82 for the second time. This difference was significant ($P < .01$). Thus, the respondents showed lower sensitivity to the matter as they went through the questionnaire.

The statement related to the community-college relation in respect to the welfare of international students was presented as a positive statement both times. The first time (Section F, Statement 1), it received a rating of 4.39 and the second time 3.93. This difference was significant ($P < .01$). Thus was shown some loss of the sensitivity by the respondents regarding the issue.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The objective of this chapter is to summarize the study with respect to its framework, design and development, the findings, conclusions and recommendations. The number of subjects identified for the study was a matter of concern. It is not possible to know exactly how many "zootecnistas" there are in Venezuela. All animal scientists are supposed to register in the Venezuelan College of Animal Scientists (Colegio Venezolano de Zootecnistas) upon graduation. Although many have failed to register, especially those graduated abroad, it was estimated that over 50 percent of the B.S. graduates from the U.S. are registered. Most of the advanced degrees graduates were identified with the help of FONAIAP, MAC and different universities. Although much effort was expended to secure identification of the entire population, some subjects were inevitably omitted. However, if this effort is to be undertaken at all, those responses received must be recognized as the best possible source of data at this time.

It is hoped that the resulting findings and conclusions will prove useful in promoting further development and improvement in the animal science education programs throughout the United States, especially those directed toward providing for specific needs of international students.

General Plan of the Study

The purpose of the study was to determine how effective were U.S. animal science programs in terms of meeting selected, specific needs of Venezuelan students. It was directed toward former Venezuelan students trained in U.S. universities during the period of 1970 through 1980.

Objectives formulated to accomplish the purpose were: 1) Identify the factors that influenced the decision of former Venezuelan students to study animal science in the United States; 2) Evaluate the effectiveness of selected aspects of the programs in animal science in terms of knowledge gained and learning experiences received, using the perceptions of former students regarding effectiveness of the programs; and 3) Determine occupational patterns of former students after graduation.

This study attempted to find out from Venezuelan students trained in animal science in the U.S., what was the nature and extent of their experience and how effective they considered the training received to work under the Venezuelan conditions. And to find out any ideas they might have concerning improvement of future programs. An attempt was also made to compare the perceptions of Venezuelan students who had returned to Venezuela with those who were still in the United States by 1980.

The final population for the study consisted of 112 former Venezuelan students who were identified. Questionnaires were given to 98 potential respondents who were available. Seventy-four (75.5 percent) of the former students returned the completed questionnaire. The instrument was also given to 12 Venezuelan seniors (1980) in the Animal Science Department at Oklahoma State University and to six Venezuelan graduate students also in the OSU Animal Science Department. Nine (75 percent)

of the seniors returned the completed questionnaires, as did six (100 percent) of the Venezuelan graduate students.

Conclusions

Research findings were summarized and analyzed; and from an attempted interpretation of findings of the study, the following conclusions were made by the investigator.

Scholastic attainment in terms of institutions showed that University of Florida was by far the most popular among the Venezuelan students interviewed. Occupational patterns showed that most of the respondents with advanced graduate work secured jobs in universities and research stations, either teaching, doing research, or both, and that those with only the B.S. degree were mostly in the production area, mainly ranching and farming.

Regarding sources of influence to study animal science in the U.S., in general, students themselves and their family businesses determined their decision to study animal science. The excellent reputation and prestige of the U.S. animal science in Venezuela were major factors influencing upon the decision to come to the U.S., along with the Venezuelan government financial supports.

Administration within the departments of Animal Science in the United States has developed to the point of providing a good atmosphere for a Venezuelan student to study. Leadership provided by the Head of the departments has done much to assure success. In terms of providing effective advisement and counseling, faculty and staff in the departments were considered well-qualified. Regarding rules and regulations, proper advisement from the department was considered inadequate. Also,

it was believed that assistance to the international students in understanding American culture should be improved. Even though, in general, advisors were considered to have done a good job, it was felt that they often failed to make efforts to become acquainted with the educational needs of international students.

Availability of reference materials was considered adequate and useful; although there were some differences between returnees and resident students, the adequacy of reference materials was considered good by both groups. Instructors were adjudged to be well-qualified to teach Venezuelan students; and although there were some differences between the two groups, the instructional methods used were considered current and appropriate. Animal science courses were considered to be well-organized, properly sequenced, current and adequate for their needs; however, it was felt that more courses were needed in international or worldwide aspects of animal production, and also that some improvement could be made in the business administration type of courses.

Overall, the non-academic activities provided by the U.S. universities were adequate and relevant to the particular needs of international students. However, it was believed that the relationship between American and international students, and assistance in understanding the American culture should be improved.

Recommendations

Based on data analysis and findings of the study, recommendations for the future of the Animal Science programs in the United States are made as follows:

1. The Animal Science departments should continue to give careful

attention to assignment of courses for teaching and to advisement duties among the faculty, especially when concerning international students. A committee made up of some international students should be formed to be consulted, when pertinent, by the Head of the department.

2. Consideration should be given by the departments to properly advise international students on rules and regulations. A manual could be published by the departments and distributed to the students, or special lectures could be organized each period; either one would be of great help to both international and American students.

3. The departments should give some consideration to provide assistance to the international students in understanding the American culture. Once a year or in each period, the departments could organize a seminar or a series of seminars; faculty members and fellow students from the different regions of the U.S. could contribute. Also student organizations should be encouraged to invite international students to participate.

4. Advisors and instructors should be encouraged to make more efforts to become acquainted with the educational needs of international students.

5. Courses and reference materials should be subjected to periodical review to maintain the good quality of the services.

6. Animal Science departments should give serious consideration to expansion of the program to include some courses in international and worldwide aspects of animal production for the benefit of not only the international but especially the American students. Many North American livestock enterprises are making considerable investment in Latin American countries (Caballero, 1977). Thus, demand for personnel, duly

prepared in solving the problems which affect agricultural production in Latin America, will increase in the near future, opening to the American students new working and training horizons in a new world that offers great possibilities and satisfactions.

7. Consideration should be given to improve courses related to business administration, especially to orient them toward a more realistic animal husbandry type of business. Emphasis in specific livestock management techniques and practices from the business administration point of view should be considered.

8. Careful attention should be given to maintaining good rapport between international and American students, and between international students and secretaries, teachers, graduate assistants and other staff. The total experience should be recognized as constituting the essential learning experience.

In conclusion, the investigator hopes that this study will prove to be of assistance to administrators and instructors in the Animal Science departments in the United States if it is their concern to further improve the animal science programs. It is to be anticipated that much benefit will take place as members of the departments continue to have trained graduates who provide much-needed expertise to improve production rates, conduct necessary research and provide assistance to people in Venezuelan agriculture in the years ahead.

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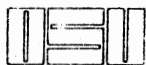
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APPENDIXES

APPENDIX A

LETTER OF MAJOR ADVISOR TO INTRODUCE THE RESEARCH
PROJECT AND THE RESEARCHER TO PERSONS THAT
COULD HELP DURING THAT DATA COLLECTION
PROCESS



Oklahoma State University

ANIMAL SCIENCE DEPARTMENT

STILLWATER, OKLAHOMA, 74074
ANIMAL HUSBANDRY BUILDING, RM. 103
(405) 624-6062

May 14, 1980

TO WHOM IT MAY CONCERN:

Please allow me to introduce myself. My name is Milton Wells and I am a member of the Animal Science Department at Oklahoma State University. The carrier of this letter is Juan Guevara who is one of my graduate students. His graduate program is well underway and we are directing his thesis study toward a study of the adequacy of U. S. animal science education in meeting the needs of animal agriculture in Venezuela.

Juan and I will spend 2 weeks to 6 weeks in Venezuela with the following objectives being pursued while we are there. (1) To interview personnel who have Animal Science degrees in several areas of animal agriculture in Venezuela. This would include the universities, the ministry of agriculture, as well as individuals in private enterprise. We would be trying to determine how well the education that they gained at some university in the United States equip them to perform the requirements of the job that they are presently in. This knowledge would be analyzed then to determine the strength and weaknesses of the education that foreign students are gaining at several universities in the United States. (2) The knowledge gained in this study would be an integral part of the Master of Science program for Juan Guevara.

We would appreciate your assistance in locating Animal Science degree holders. They are uniquely qualified to assist us.

Thank you very much for your assistance.

Sincerely,

A handwritten signature in cursive script that reads "Milton Wells".

Milton Wells
Professor

MW/csw

14 de Mayo, 1980

A QUIEN PUEDA INTERESAR:

Permítame presentarme. Mi nombre es Milton Wells y soy un miembro del Departamento de Ciencia Animal de la Universidad de Oklahoma. El portador de esta carta es Juan Guevara, quien es uno de mis alumnos de post-grado. Su programa esta bien encaminado y estamos dirigiendo su estudio de tesis hacia una adecuación de la enseñanza de Ciencia Animal en los Estados Unidos a las necesidades de la agricultura animal en Venezuela.

Juan y yo pasaremos de 2 a 6 semanas en Venezuela, con los siguientes objetivos a llevar a cabo durante nuestra permanencia:

- 1) Entrevistar personas que tengan títulos de Ciencia Animal en las distintas áreas de agricultura animal en Venezuela. Esto incluirá universidades y el Ministerio de Agricultura y Cría, así como miembros de la empresa privada. Trataremos de determinar hasta qué punto la educación que obtuvieron en las universidades de los Estados Unidos los equipó para llevar a cabo los requerimientos del trabajo en que se desempeñan actualmente. Este conocimiento será analizado para determinar los puntos débiles y fuertes de la educación que obtienen estudiantes extranjeros en las diferentes universidades.
- 2) El conocimiento adquirido en este estudio será parte integral del programa de Maestría en Ciencias para Juan Guevara.

Apreciaremos su ayuda en la localización de graduados en Ciencia Animal. Ellos están calificados de forma única para asistirnos.

Agradeciendo la ayuda prestada, quedo de Ud.

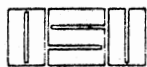
Atentamente,

Milton Wells
Profesor

acc

APPENDIX B

LETTER OF MAJOR ADVISOR AND RESEARCHER TO THE
FORMER VENEZUELAN STUDENTS SELECTED AS
POTENTIAL RESPONDENTS



Oklahoma State University

ANIMAL SCIENCE DEPARTMENT

STILLWATER, OKLAHOMA, 74074
ANIMAL HUSBANDRY BUILDING, RM. 103
(405) 624-6062

May 14, 1980

International
Animal Science Degree Recipients
U.S. Universities
1970-1980

Dear Animal Science Alumni:

The Animal Science Department at Oklahoma State University is currently engaged in an assessment of various aspects of animal science programs in the United States. The information gathered will be utilized to evaluate and improve the quality of the total educational experience of international animal science students.

We need your help, as a recent graduate, you are well qualified to comment on the content, relevance, and general characteristics of the program you attended. Your individual responses will, of course, be kept completely confidential.

We have kept our questionnaire as brief as possible. You will need no more than 15 minutes to fill it out.

Your response is important and we thank you for your cooperation.

Sincerely,

Milton Wells
Professor
Animal Science Dept.
Okla. State Univ.

Juan Guevara
Masters Candidate
Animal Science Dept.
Okla. State Univ.

MW/JG/csw

14 de Mayo, 1980

International
Animal Science Degree Recipients
Universidades de los Estados Unidos
1970-1980

Apreciado alumno de Ciencia Animal:

El Departamento de Ciencia Animal de la Universidad de Oklahoma está comprometido en el asesoramiento de varios aspectos de programas de Ciencia Animal en los Estados Unidos. La información recogida será utilizada para evaluar y mejorar la calidad de la experiencia educacional total de los estudiantes extranjeros de dicha carrera.

Necesitamos su cooperación. Como recién graduado, está bien calificado para comentar sobre el contenido, relevancia y características generales del programa al que Ud. asistió. Sus respuestas individuales, por supuesto, serán absolutamente confidenciales.

Hemos mantenido este cuestionario lo más breve posible. No necesitará más de 15 minutos para llenarlo.

Su respuesta es importante y le damos las gracias anticipadas por su valiosa ayuda.

Atentamente,

Milton Wells
Profesor
Departamento de Ciencia Animal
Universidad de Oklahoma

Juan Guevara
Candidato a Maestria

acc

APPENDIX C

DATA COLLECTION INSTRUMENT

AN EVALUATION OF ANIMAL SCIENCE PROGRAMS
IN NORTH AMERICAN UNIVERSITIES BY INTERNATIONAL
STUDENTS GRADUATING DURING 1970-1980

Through this survey the conductor hopes to obtain information concerning the programs of Animal Science in North American Universities from international students who graduated during the period of 1970-1980. The results of this survey should reflect not only upon the past but also the present status of Animal Science programs in U.S. Universities as these departments relate to international students. The conductor will be grateful for your full cooperation in expressing your true feelings. Feel free to answer without reservations.

I. General Information.

A. Personal Information.

- 1) Age _____
- 2) Sex _____
- 3) Marital Status: Single _____
 Married _____ Children _____
 Divorced _____ Children _____
 Widowed _____ Children _____

B. Family.

- 1) Father's occupation _____
- 2) Highest level of education reached for:
 - a) Father _____
 - b) Mother _____
 - c) Spouse _____

C. Education.

- 1) High School:
 - a) Location _____
 - b) Year of graduation _____
- 2) Higher Education:

Institution	Degree	Major	Year of Graduation	Location

-2-

D. Professional

List the jobs that you have held before (if any) and after graduation in the United States.

Position	Employer	Location	Years	Area*

*for area use any of the following:

- a) Basic research
- b) Applied research
- c) Teaching
- d) Extension service
- e) Private company employee
- f) Government
- g) Foundation
- h) Self-employed
- i) Other _____

E. Motivation.

- 1) Score the following persons or items according to the amount of influence they had upon your decision to study Animal Science.

Please circle the number which best reflects the amount of influence they had upon your decision to study Animal Science. 5 = Great Influence; 4 = Considerable Influence; 3 = Some influence; 2 = A little influence; 1 = No influence.

Father or guardian	5	4	3	2	1
College of school counselor	5	4	3	2	1
Friend who had studied it	5	4	3	2	1
Own experience	5	4	3	2	1
Family business (farm, ranch, etc.)	5	4	3	2	1
Others, specify _____	5	4	3	2	1

- 2) The amount of influence the following items had upon your decision to study in the United States.

Father or guardian	5	4	3	2	1
College or school counselor	5	4	3	2	1
Government official	5	4	3	2	1
Your government financial support	5	4	3	2	1
Parental financial support	5	4	3	2	1
Reputation of U.S. degrees	5	4	3	2	1
Political problems in local Universities	5	4	3	2	1
Needed for reaching higher positions	5	4	3	2	1
Prestige	5	4	3	2	1
Excellence of U.S. education in Animal Science	5	4	3	2	1
Others, specify _____	5	4	3	2	1

-3-

II. Please respond to the following statements in relation to the Animal Science program at the U.S. University from which you graduated. Please use the code below to respond to each of the statements by circling the response that most nearly expresses your feelings on each individual statement. Please circle only one. SA = Strongly Agree; A = Agree
N = Neutral; D = Disagree; SD = Strongly Disagree.

A. Administration and Organization

1. The administration of the Animal Science Department had well-qualified personnel as instructors. SA A N D SD
2. The administration of the department was concerned with meeting the needs of all students. SA A N D SD
3. The administration of the department played an active role in student functions and activities. SA A N D SD
4. The Head of the department did an outstanding job in administrating the Animal Science program. SA A N D SD
5. The Head of the department had a good relationship with international students. SA A N D SD
6. The Head of the department appeared to be somewhat prejudiced against international students. SA A N D SD
7. Secretaries and other staff of the department were always friendly or very cooperative with international students. SA A N D SD
8. The administration of the department at times failed to properly advise international students concerning rules and regulations. SA A N D SD
9. Flexibility in administration of the department concerning international students was most satisfactory. SA A N D SD
10. The administration of the department was concerned with meeting the needs of international students. SA A N D SD

B. Advisement and Counseling

1. Advisors in the department were well qualified to advise international students. SA A N D SD
2. Advisors of the department were effective in their encouragement to each international student to study and complete assignments. SA A N D SD
3. Advisors of the department were friendly and cooperative in their work with individual students in helping them with personal needs. SA A N D SD
4. Advisors and counselors made an effort to become acquainted with and to understand the culture and customs of international students. SA A N D SD
5. Advisors and counselors often failed to make an effort to become acquainted with the educational needs of international students. SA A N D SD
6. Advisors and faculty members did not make themselves available to students outside of class time. SA A N D SD
7. Advisors and counselors of the department were patient and understanding with international students. SA A N D SD
8. Advisors and counselors of the department at times seemed to show prejudice against international students. SA A N D SD

-4-

- | | | | | | | |
|-----|--|----|---|---|---|----|
| 9. | Advisors of the department appeared to be happy to be assisting international students. | SA | A | N | D | SD |
| 10. | Advisors and faculty members made a sincere effort, when called upon, to advise and assist international students with problems such as housing, driving and financial problems. | SA | A | N | D | SD |

C. Reference Materials

- | | | | | | | |
|-----|--|----|---|---|---|----|
| 1. | Instructional aids which were used in the department courses were adequate. | SA | A | N | D | SD |
| 2. | Current textbooks and references were used in the Animal Science classes. | SA | A | N | D | SD |
| 3. | Textbooks required of students in the department were relevant and adequate for meeting the needs of students. | SA | A | N | D | SD |
| 4. | The department had available sufficient amounts of reference materials for students to use. | SA | A | N | D | SD |
| 5. | There was a sufficient number and variety of Animal Science reference materials available to students in the campus library. | SA | A | N | D | SD |
| 6. | The library service was excellent. | SA | A | N | D | SD |
| 7. | In general, the library was well supplied with general information materials and references. | SA | A | N | D | SD |
| 8. | The laboratories were well equipped for meeting the needs of the courses. | SA | A | N | D | SD |
| 9. | Laboratories required in the department were relevant and adequate for meeting the needs of the courses. | SA | A | N | D | SD |
| 10. | Laboratory work was in agreement with the course needs. (theoretical) | SA | A | N | D | SD |
| 11. | Laboratories were relevant and adequate for teaching practical skills. | SA | A | N | D | SD |

D. Instructors and Instruction

- | | | | | | | |
|-----|---|----|---|---|---|----|
| 1. | Instructors of the department were well qualified to teach international students. | SA | A | N | D | SD |
| 2. | Instructional methods and techniques used were up-to-date and appropriate for the courses. | SA | A | N | D | SD |
| 3. | Inspiration and motivation presented by instructors in the department was adequate. | SA | A | N | D | SD |
| 4. | Instructors created an atmosphere in the classroom which exhibited a concern for the welfare of international students. | SA | A | N | D | SD |
| 5. | Instructors of the department were not prepared for teaching the classes assigned. | SA | A | N | D | SD |
| 6. | Instructors personally exhibited a high degree of confidence. | SA | A | N | D | SD |
| 7. | Instructors of the department were prejudiced in favor of international students compared to native students. | SA | A | N | D | SD |
| 8. | Control of classes by instructors was at times hardly adequate. | SA | A | N | D | SD |
| 9. | Instructors of the department made an effort to become acquainted with and to understand the educational needs of international students. | SA | A | N | D | SD |
| 10. | In general, the relationship between instructors and international students was excellent. | SA | A | N | D | SD |

-5-

- | | | | | | |
|---|----|---|---|---|----|
| 11. Instructors were not always fair and just in evaluating students' work and assigning grades. | SA | A | N | D | SD |
| 12. Instructors consistently provided high encouragement for learners. | SA | A | N | D | SD |
| 13. Objectives of instruction in all courses were clearly presented to students and were within range of student learning capabilities. | SA | A | N | D | SD |
| 14. Student involvement in classes was encouraged and was readily accepted by instructors. | SA | A | N | D | SD |
| 15. Relevance of assignments to student needs was often not evident. | SA | A | N | D | SD |
| 16. Honesty of instructors was evident and had good effects on students. | SA | A | N | D | SD |
| 17. Instructors were patient and understanding with international students. | SA | A | N | D | SD |

E. Animal Science Courses

- | | | | | | |
|---|----|---|---|---|----|
| 1. The program in Animal Science in the U.S. prepared you very well to work. | SA | A | N | D | SD |
| 2. The practical courses taught you very well for the work you are doing now. | SA | A | N | D | SD |
| 3. The basic courses (chemistry, biology, etc.) were a very important base for the Animal Science courses. | SA | A | N | D | SD |
| 4. The Animal Science courses were relevant with your needs for working in your country. | SA | A | N | D | SD |
| 5. The program in Animal Science in the U.S. adequately prepared you for working in your country. | SA | A | N | D | SD |
| 6. Courses in animal nutrition were pertinent with your needs. | SA | A | N | D | SD |
| 7. You did not have enough practical experiences during your studies in the U.S. | SA | A | N | D | SD |
| 8. Courses in business (Economic, Marketing, etc.) were very helpful for your work in your country. | SA | A | N | D | SD |
| 9. The courses in Reproduction (physiology, anatomy, etc.) were up-to-date with your needs for working in your country. | SA | A | N | D | SD |
| 10. During the laboratory work you had adequate opportunities for practical experience. | SA | A | N | D | SD |
| 11. Departmental courses in general (Genetics, Nutrition, Reproduction, etc.) were relevant and adequate for meeting the needs for working in your country. | SA | A | N | D | SD |
| 12. Management courses in Animal Husbandry were useful and practical. | SA | A | N | D | SD |
| 13. The courses in Genetics (animal breeding) were relevant with your needs for working in your country. | SA | A | N | D | SD |
| 14. Courses in extension education would have been a useful addition to the courses in Animal Science. | SA | A | N | D | SD |
| 15. More courses were needed in international or world wide aspects of animal production. | SA | A | N | D | SD |
| 16. Courses of the department were well organized and properly sequenced. | SA | A | N | D | SD |

-6-

F. Non-Academic Activities

- | | | | | | |
|---|----|---|---|---|----|
| 1. Office, classroom and reading room facilities of the Animal Science Department were adequate for the best welfare of students. | SA | A | N | D | SD |
| 2. The relationship of American students to international students within the department was generally good. | SA | A | N | D | SD |
| 3. The dorms at the University were adequate and comfortable for living. | SA | A | N | D | SD |
| 4. The Animal Science Department provided assistance to international students in understanding the culture of the United States. | SA | A | N | D | SD |
| 5. Travel and tours to attend conventions or meetings of the agricultural organizations (ASAS, ADSA, etc.) were helpful. | SA | A | N | D | SD |
| 6. The student organizations at the University were not suitable for participation by international students. | SA | A | N | D | SD |
| 7. Housing facilities for married students were adequate and comfortable for living. | SA | A | N | D | SD |
| 8. Language was not a problem at all. | SA | A | N | D | SD |
| 9. The University campus was modern and up-to-date. | SA | A | N | D | SD |
| 10. Food services on campus were good in terms of quality and quantity. | SA | A | N | D | SD |
| 11. Financial aids programs at the University were not as good as needed for international students. | SA | A | N | D | SD |
| 12. The varieties of intra-mural sports programs at the physical center at the University were sufficient to meet student needs. | SA | A | N | D | SD |
| 13. The University from which you graduated enjoys a good academic reputation in your country. | SA | A | N | D | SD |
| 14. Community-college relations at the city or the University town were good. | SA | A | N | D | SD |

III. Overall Evaluation of the Animal Science program at U.S. Universities.

- | | | | | | |
|---|----|---|---|---|----|
| 1. As a whole, the total pattern of administration and organization for the department was somewhat lacking. | SA | A | N | D | SD |
| 2. The Head of the Department did an outstanding job in administrating the Animal Science program. | SA | A | N | D | SD |
| 3. Personnel responsible for student advisement and counseling were well qualified. | SA | A | N | D | SD |
| 4. Courses of the department were well organized and properly sequenced. | SA | A | N | D | SD |
| 5. Textbooks, instructional aids, etc. were not adequate and relevant for meeting the needs of students in the program. | SA | A | N | D | SD |
| 6. Instructional methods and techniques used by the department staff were up-to-date and appropriate for the courses. | SA | A | N | D | SD |
| 7. Instructors were not well qualified for teaching international students. | SA | A | N | D | SD |
| 8. The relationship between the instructors and international students was excellent. | SA | A | N | D | SD |

-7-

9. Non-academic activities associated with the University campus were excellent. SA A N D SD
10. In general, the relationship between international students and American students was not good. SA A N D SD
11. There were adequate provisions in the city in which the University was located to adequately provide for the needs of international students. SA A N D SD
12. The relationship between the community and the university was good from the standpoint of international students. SA A N D SD
13. Do you have specific suggestions for improving the quality of education offered by the U.S. Animal Science Departments?

-8-

IV. Special section for students who obtained advanced degrees, Master or Doctorate (Ph.D.).

Please respond to the following statements using the same code as in the last section. Please circle only one. SA = Strongly Agree; A = Agree; N = Neutral; D = Disagree; SD = Strongly Disagree.

- | | | | | | |
|--|----|---|---|---|----|
| 1. Assistance and cooperation in working on re-
search problems or theses by instructors was
quite adequate. | SA | A | N | D | SD |
| 2. The thesis topic was relevant to your country's
needs. | SA | A | N | D | SD |
| 3. The thesis topic was selected mainly by your
advisor rather than by yourself. | SA | A | N | D | SD |
| 4. It would have been better to have done the
research project in your own country rather
than in United States. | SA | A | N | D | SD |
| 5. The research facilities were more adequate in
the U.S. University. | SA | A | N | D | SD |
| 6. In the U.S. University library there were less
current references and facilities. | SA | A | N | D | SD |
| 7. If the research would have been done in your
own country, other people associated with the
research would have become knowledgeable in
the area. | SA | A | N | D | SD |
| 8. Language difficulties were a problem in the
development of the research work. | SA | A | N | D | SD |
| 9. The research project was a worthwhile and
rewarding experience. | SA | A | N | D | SD |
| 10. It would have been better to have worked on
a specific problem relevant to the needs of
your country. | SA | A | N | D | SD |

APPENDIX D

SPANISH TRANSLATION OF DATA

COLLECTION INSTRUMENT

EVALUACION DE PROGRAMAS DE
 CIENCIA ANIMAL EN UNIVERSIDADES NORTEAMERICANAS
 HECHA POR ESTUDIANTES EXTRANJEROS
 GRADUADOS ENTRE 1970-1980

A través de esta encuesta, el conductor espera obtener información concierne a los programas de Ciencia Animal en universidades norteamericanas, de estudiantes extranjeros que se graduaron en el período comprendido entre 1970 y 1980. Los resultados de esta encuesta no deben reflejar solo el pasado sino el presente estatus de los programas de Ciencia Animal en universidades norteamericanas, en relación a estudiantes de otras naciones. El conductor quedará agradecido por su total colaboración al expresar sus verdaderos sentimientos. Siéntase libre de expresar sus respuestas sin reservas.

I. Información General.

A. Información Personal

- 1) Edad _____
- 2) Sexo _____
- 3) Estado Civil: Soltero _____
- Casado _____ Hijos _____
- Divorciado _____ Hijos _____
- Viudo _____ Hijos _____

B. Familia.

- 1) Ocupación del padre _____
- 2) Nivel más alto de educación alcanzado por:
- a) Padre _____
- b) Madre _____
- c) Esposo (a) _____

C. Educación.

- 1) Escuela Secundaria:
- a) Dirección _____
- b) Año de Graduación _____

2) Educación Superior:

Institución	Grado	Mención	Año de Graduación	Dirección

D. Profesional

Haga una lista de los trabajos realizados antes (si lo hubo) y después de su graduación en Estados Unidos.

Posición	Empresa que lo empleó	Lugar	años	Area*

*puede usar cualquiera de las siguientes:

- a) Investigación Básica
- b) Investigación Aplicada
- c) Docencia
- d) Servicio de Expansión
- e) Empleado en compañía privada
- f) Gobierno
- g) Fundación
- h) Trabaja por su cuenta
- i) Otros _____

E. Motivación.

- 1) Califique a las siguientes personas o detalles de acuerdo con la cantidad de influencia que tuvieron en su decisión para estudiar Ciencia Animal.

Por favor haga un círculo en el número que refleja mejor la cantidad de influencia que tuvieron en su decisión de estudiar Ciencia Animal. 5= Gran Influencia; 4= Influencia Considerable; 3= Alguna Influencia; 2= Una Pequeña Influencia; 1= Ninguna.

Padre o tutor	5	4	3	2	1
Consejero de la Universidad	5	4	3	2	1
Amigo que lo estudió	5	4	3	2	1
Experiencia propia	5	4	3	2	1
Negocio de familia (hacienda)	5	4	3	2	1
Otros, especifique _____	5	4	3	2	1

- 2) La cantidad de influencia que tuvieron los siguientes detalles en su decisión de estudiar en Estados Unidos.

Padre o tutor	5	4	3	2	1
Universidad o consejero de escuela	5	4	3	2	1
Oficial del Gobierno	5	4	3	2	1
SopORTE financiero de su Gobierno	5	4	3	2	1
SopORTE financiero de sus padres	5	4	3	2	1
Reputación de grados en E.E.U.U.	5	4	3	2	1
Problemas políticos en sus universidades	5	4	3	2	1
Necesidad de alcanzar alta posición	5	4	3	2	1
Prestigio	5	4	3	2	1
Excelencia en la enseñanza de Ciencia Animal en E.E.U.U.	5	4	3	2	1
Otros, especifique _____	5	4	3	2	1

- II. Por favor responda las siguientes preguntas en relación al programa de Ciencia Animal de la universidad norteamericana en la cual Ud. se graduó. Por favor utilice el código señalado abajo para responder cada una de las preguntas, haciendo un círculo en la respuesta que expresa mejor sus opiniones acerca de estas afirmaciones. Le agradeceremos marcar sólo una. TA = Total Acuerdo; A = Acuerdo; N = Neutral; D = Desacuerdo; CD = Completo Desacuerdo.

A. Administración y Organización.

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|---|----|---|---|---|----|
| 1. La administración del Departamento de Ciencia Animal tiene personal muy bien calificado como instructores. | TA | A | N | D | CD |
| 2. La administración del departamento era concerniente a encontrar las necesidades de todos sus estudiantes. | TA | A | N | D | CD |
| 3. La administración del departamento jugaba un papel activo en las funciones y actividades de los estudiantes. | TA | A | N | D | CD |
| 4. El Director del Departamento hizo un trabajo sobresaliente al administrar el programa de Ciencia Animal. | TA | A | N | D | CD |
| 5. El Director del Departamento tenía buenas relaciones con los estudiantes extranjeros. | TA | A | N | D | CD |
| 6. El Director del Departamento parecía un poco prejuiciado con respecto a los estudiantes extranjeros. | TA | A | N | D | CD |
| 7. Secretarías y otros empleados del Departamento eran siempre amistosos y cooperadores con los estudiantes extranjeros. | TA | A | N | D | CD |
| 8. La administración del Departamento a veces fallaba en no advertir a los estudiantes extranjeros acerca de los reglamentos. | TA | A | N | D | CD |

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| 9. La flexibilidad en la administración del Departamento, en lo concerniente a los estudiantes extranjeros, era bastante satisfactoria. | TA A N D CD |
| 10. A la administración del Departamento le concernía encontrar las necesidades de los estudiantes extranjeros. | TA A N D CD |

B. Guía y Orientación

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| 1. Los consejeros del Departamento estaban bien calificados para aconsejar a los estudiantes extranjeros. | TA A N D CD |
| 2. Los consejeros del Departamento eran efectivos en alentar a cada estudiante extranjero a estudiar y completar materias. | TA A N D CD |
| 3. Los consejeros del Departamento eran amistosos y cooperadores en su trabajo con estudiantes, en particular al ayudarlos en sus necesidades específicas. | TA A N D CD |
| 4. Los consejeros y guías hacían un esfuerzo por conocer y entender la cultura y costumbres de los estudiantes extranjeros. | TA A N D CD |
| 5. Los consejeros y guías fallaban en hacer un esfuerzo para conocer las necesidades educacionales de los estudiantes extranjeros. | TA A N D CD |
| 6. Consejeros y miembros de la facultad no se hacían disponibles para los estudiantes fuera del horario de clases. | TA A N D CD |
| 7. Consejeros y guías del Departamento eran pacientes y comprensivos con los estudiantes extranjeros. | TA A N D CD |
| 8. Consejeros y guías del Departamento a veces parecían mostrar prejuicios contra los estudiantes extranjeros. | TA A N D CD |
| 9. Consejeros del Departamento parecían contentos de poder ayudar a los estudiantes extranjeros. | TA A N D CD |
| 10. Consejeros y guías del Departamento hacían un esfuerzo sincero, cuando los llamaban, para aconsejar y ayudar estudiantes extranjeros con problemas de alojamiento, desplazamiento o financieros. | TA A N D CD |

C. Materiales de Referencia

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|--|-------------|
| 1. Ayudas de instrucción usadas en el Departamento, en los cursos, eran adecuadas. | TA A N D CD |
| 2. Libros de texto corrientes y de referencia eran usados en las clases de Ciencia Animal. | TA A N D CD |
| 3. Los textos requeridos para los estudiantes, en el Departamento, eran relevantes y adecuados a las necesidades de los estudiantes. | TA A N D CD |
| 4. El Departamento tenía disponible suficiente cantidad de materiales de referencia para el uso de los estudiantes. | TA A N D CD |

5. Había suficiente número y variedad de materiales de referencia de Ciencia Animal, disponible para los estudiantes en la biblioteca de la Universidad.	TA	A	N	D	CD
6. El servicio de biblioteca era excelente.	TA	A	N	D	CD
7. En general, la biblioteca estaba bien equipada con materiales y referencias de información general.	TA	A	N	D	CD
8. Los laboratorios estaban bien equipados de acuerdo a las necesidades de los cursos.	TA	A	N	D	CD
9. Los laboratorios requeridos en el Departamento eran relevantes y adecuados a las necesidades de los cursos.	TA	A	N	D	CD
10. Los laboratorios eran relevantes y adecuados para la enseñanza de habilidades prácticas.	TA	A	N	D	CD
11. Los trabajos de laboratorio estaban de acuerdo con las necesidades de los cursos (teoría).	TA	A	N	D	CD

D. Instructores e Instrucciones

1. Los instructores del Departamento estaban bien calificados para enseñar estudiantes extranjeros.	TA	A	N	D	CD
2. Los métodos y técnicas de instrucción estaban al día y eran apropiados para los cursos.	TA	A	N	D	CD
3. La inspiración y motivación presentada por los instructores del Departamento era adecuada.	TA	A	N	D	CD
4. Los instructores creaban una atmósfera en la clase concerniente al bienestar de los estudiantes extranjeros.	TA	A	N	D	CD
5. Los instructores del Departamento no estaban preparados para dictar las clases asignadas.	TA	A	N	D	CD
6. Los instructores personalmente exhibían un alto grado de confianza.	TA	A	N	D	CD
7. Los instructores del Departamento estaban prejuiciados en favor de los estudiantes extranjeros comparado con los estudiantes nativos.	TA	A	N	D	CD
8. El control de las clases, por los instructores, a veces era poco adecuado.	TA	A	N	D	CD
9. Los instructores del Departamento hacían un esfuerzo por conocer y entender las necesidades educativas de los estudiantes extranjeros.	TA	A	N	D	CD
10. En general, la relación entre los instructores y los estudiantes extranjeros era excelente.	TA	A	N	D	CD
11. Los instructores no siempre eran justos al evaluar el trabajo de los estudiantes y asignar notas.	TA	A	N	D	CD
12. Los instructores alentaban con ahínco a los estudiantes.	TA	A	N	D	CD
13. Los objetivos de instrucción en todos los cursos eran claramente presentados a los estudiantes, dentro del nivel de capacidad de aprender de los alumnos.	TA	A	N	D	CD
14. El involucramiento de los estudiantes en las clases era alentado y aceptado por los instructores.	TA	A	N	D	CD

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| 15. La relevancia de las tareas con respecto a las necesidades de los estudiantes muchas veces no er evidente. | TA | A | N | D | CD |
| 16. La honestidad de los instructores era evidente y tenía buen efecto sobre los estudiantes. | TA | A | N | D | CD |
| 17. Los instructores eran pacientes y comprensivos con los estudiantes extranjeros. | TA | A | N | D | CD |

E. Cursos de Ciencia Animal

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|--|----|---|---|---|----|
| 1. El programa de Ciencia Animal en Estados Unidos lo preparó muy bien para trabajar. | TA | A | N | D | CD |
| 2. Los cursos prácticos le enseñaron muy bien para el trabajo que hace ahora. | TA | A | N | D | CD |
| 3. Los cursos básicos (química, biología, etc.) fueron una base muy importante para los cursos de Ciencia Animal. | TA | A | N | D | CD |
| 4. Los cursos de Ciencia Animal fueron relevantes a sus necesidades para trabajar en su país. | TA | A | N | D | CD |
| 5. El programa de Ciencia Animal en Estados Unidos lo preparó adecuadamente para trabajar en su país. | TA | A | N | D | CD |
| 6. Los cursos de nutrición animal eran pertinentes a sus necesidades. | TA | A | N | D | CD |
| 7. Ud. no tuvo suficientes experiencias prácticas durante sus estudios en Estados Unidos. | TA | A | N | D | CD |
| 8. Los cursos de negocios (Economía, Mercadeo, etc.) le fueron muy útiles para trabajar en su país. | TA | A | N | D | CD |
| 9. Los cursos en Reproducción (fisiología, anatomía, etc.) estaban al día con sus necesidades para trabajar en su país. | TA | A | N | D | CD |
| 10. Durante los trabajos de laboratorio Ud. tuvo una oportunidad adecuada para la experiencia práctica. | TA | A | N | D | CD |
| 11. Los cursos departamentales en general (Genética, Nutrición, Reproducción, etc.) eran relevantes y adecuados a las necesidades de trabajo en su país. | TA | A | N | D | CD |
| 12. Los cursos de Administración en Agricultura Animal fueron útiles y prácticos. | TA | A | N | D | CD |
| 13. Los cursos en Genética (crianza animal) eran relevantes a sus necesidades para trabajar en su país. | TA | A | N | D | CD |
| 14. Cursos en extensión de la educación hubieran sido útiles a los cursos de Ciencia Animal. | TA | A | N | D | CD |
| 15. Se necesitaban más cursos de aspectos internacionales o del mundo en lo concerniente a producción animal. | TA | A | N | D | CD |
| 16. Los cursos del Departamento estaban bien organizados y en una secuencia adecuada. | TA | A | N | D | CD |

F. Actividades No Académicas

- | | | | | | |
|--|----|---|---|---|----|
| 1. Oficinas, clases y cuartos de lectura del Departamento de Ciencia Animal eran adecuados para el bienestar de los estudiantes. | TA | A | N | D | CD |
|--|----|---|---|---|----|

2. La relación de estudiantes americanos y extranjeros, dentro del departamento, era generalmente buena.	TA	A	N	D	CD
3. Los dormitorios en la Universidad eran adecuados y cómodos para vivir.	TA	A	N	D	CD
4. El Departamento de Ciencia Animal ayudaba a los estudiantes extranjeros a entender la cultura de los Estados Unidos.	TA	A	N	D	CD
5. Viajes y excursiones, para asistir a convenciones o encuentros de las organizaciones agrícolas (ASAS, ADSA, etc.), fueron de gran ayuda.	TA	A	N	D	CD
6. Las organizaciones estudiantiles en la Universidad no eran adecuadas para la participación de estudiantes extranjeros.	TA	A	N	D	CD
7. Facilidades de habitación para estudiantes casados eran adecuadas y cómodas para vivir.	TA	A	N	D	CD
8. El idioma no era un problema.	TA	A	N	D	CD
9. Los servicios de comida en el campus universitario eran muy buenos en términos de calidad y cantidad.	TA	A	N	D	CD
10. Los programas de ayuda financiera en la Universidad no eran lo suficientemente buenos para las necesidades de los estudiantes extranjeros.	TA	A	N	D	CD
11. La variedad de programas de deportes en el centro de cultura física de la Universidad eran suficientes para las necesidades de los estudiantes.	TA	A	N	D	CD
12. La universidad en la que Ud. se graduó goza de buena reputación académica en su país.	TA	A	N	D	CD
13. Las relaciones de la comunidad de la Universidad con la ciudad o el pueblo cercano eran buenas.	TA	A	N	D	CD

III. Evaluación completa del programa de Ciencia Animal en las universidades de los Estados Unidos.

1. Como un todo, faltaba el patrón total de administración y organización en el Departamento.	TA	A	N	D	CD
2. El Director del Departamento hizo un trabajo sobresaliente en la administración del programa de Ciencia Animal.	TA	A	N	D	CD
3. El personal responsable de la guía y orientación de los estudiantes estaba bien calificado.	TA	A	N	D	CD
4. Los cursos del Departamento estaban bien organizados y en una secuencia adecuada.	TA	A	N	D	CD
5. Los libros de texto, ayudas de instrucción, etc. no eran adecuadas y relevantes a las necesidades de los estudiantes del programa.	TA	A	N	D	CD
6. Los métodos y técnicas de instrucción usadas por el personal del Departamento estaban al día y eran adecuadas para los cursos.	TA	A	N	D	CD
7. Los instructores no estaban bien calificados para enseñar estudiantes extranjeros.	TA	A	N	D	CD
8. La relación entre los estudiantes extranjeros y los instructores era muy buena.	TA	A	N	D	CD

9. Las actividades no académicas asociadas con la universidad eran excelentes. TA A N D CD
10. En general, la relación entre estudiantes extranjeros y americanos no era buena. TA A N D CD
11. Había provisiones adecuadas en la ciudad en la que se encontraba la Universidad, para proveer a los estudiantes extranjeros en sus necesidades. TA A N D CD
12. La relación entre la comunidad y la Universidad era buena desde el punto de vista de los estudiantes extranjeros. TA A N D CD
13. ¿Tiene Ud. alguna sugerencia específica para mejorar la calidad de la educación ofrecida por los Departamentos de Ciencia Animal?

IV. Sección especial para estudiantes que obtuvieron grados avanzados, Maestrías (Master) o Doctorado (Ph.D.).

Por favor responda a las siguientes preguntas usando el mismo código de la sección anterior. Señale con un círculo solamente una respuesta. TA = Total Acuerdo; A = Acuerdo; N = Neutral; D = Desacuerdo; CD = Completo Desacuerdo.

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|--|----|---|---|---|----|
| 1. Asistencia y cooperación por parte de los instructores al trabajar en problemas de investigación o tesis era bastante adecuada. | TA | A | N | D | CD |
| 2. El tema de la tesis era relevante a las necesidades de su país. | TA | A | N | D | CD |
| 3. El tema de la tesis fué elegido más por su guía que por Ud. mismo. | TA | A | N | D | CD |
| 4. Hubiera sido mucho mejor hacer el proyecto de investigación en su propio país en lugar de los Estados Unidos. | TA | A | N | D | CD |
| 5. Las facilidades para la investigación eran más adecuadas en la Universidad de Estados Unidos. | TA | A | N | D | CD |
| 6. En la biblioteca de la Universidad en E.E.U.U. había menos referencias y facilidades. | TA | A | N | D | CD |
| 7. Si la investigación se hubiera hecho en su país, las personas asociadas con la misma se hubieran hecho conocidas en ese lugar. | TA | A | N | D | CD |
| 8. Las dificultades del idioma fueron un problema en el desarrollo del trabajo de investigación. | TA | A | N | D | CD |
| 9. El proyecto de investigación fué una experiencia recompensante y que valía la pena. | TA | A | N | D | CD |
| 10. Hubiera sido mucho mejor trabajar en un problema específico relevante a las necesidades de su país. | TA | A | N | D | CD |

VITA |

Juan M. Guevara

Candidate for the Degree of

Master of Science

Thesis: ADEQUACY OF ANIMAL SCIENCE EDUCATION IN THE UNITED STATES IN MEETING THE NEEDS OF ANIMAL AGRICULTURE IN VENEZUELA

Major Field: Animal Science

Biographical:

Personal Data: Born in Caracas, Venezuela, August 19, 1951, the son of Dr. Juan M. Guevara B. and Belen C. Rodriguez de Guevara. Married to Elizabeth Ann Kosko, May 25, 1979; the father of one son, Juan M., born June 2, 1981.

Education: Graduated from Colegio de La Salle la Colina in Caracas, Venezuela, 1969; receiving a high school degree: "Bachiller en Ciencias". Enrolled in Industrial Engineering at Universidad Catolica Andres Bello, Caracas, Venezuela, 1969-70; enrolled in Agronomy at Central University of Venezuela, Maracay, Venezuela, 1971-74; enrolled in Agronomy at University of Puerto Rico, Mayaguez, Puerto Rico, 1974-76; enrolled at Saginaw Valley State College, Saginaw, Michigan, 1976; enrolled at Delta College, University Center, Michigan, 1977; received the Bachelor of Science in Agriculture degree from Oklahoma State University in May, 1979, with a major in Animal Science; completed requirements for the Master of Science degree at Oklahoma State University in May, 1982.

Experience: Research assistance at "Fundacion CIARA", Caracas, Venezuela, Maracay, Venezuela 1971-1972; manager and co-owner of a dairy farm, Sta. Cruz de Aragua, Venezuela, 1972-74; member of the Dairy Cattle Judging Team at Oklahoma State University, Stillwater, Oklahoma, 1978-79.

Professional Organizations: "Colegio Venezolano de Zootecnicos", American Society of Animal Science, American Society of Dairy Science and Alpha Zeta.